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BOEING

Volume 7-5A
Final Report

7

Data Book
D180-27477-7

Space Station Needs, Attributes, and Architectural Options Study

(NASA-CR-173701) SPACE STATION NEEDS, ATTRIBUTES AND ARCHITECTURAL OPTIONS STUDY. VOLUME 7-5A: DATA BOOK. MISSION ANALYSIS PART A Final Report (Boeing Co., Seattle, Wash.) 647 p HC A99/MF A01 CSCL 22B G3/18

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Arthur D. Little, Inc. Battelle Life Systems, Inc. HAMILTON STANDARD RCA

INTERMETRICS Microgravity Research Associates, inc. NPRI Econ

Space Station
Needs, Attributes and Architectural Options Study

Contract NASW-3680

D180-27477-7

Final Report

Volume 7 - 5A

Data Book

Mission Analysis Part A

April 21, 1983

for

National Aeronautics and Space Administration

Headquarters

Washington, D. C.

Approved by Gordon Woodcock

Gordon Woodcock,
Study Manager

Boeing Aerospace Company

P. O. Box 3999

Seattle, Washington 98124

BOEING

FOREWORD

The Space Station Needs, Attributes and Architectural Options Study (Contract NASW-3680) was initiated in August of 1982 and completed in April of 1983. This was one of eight parallel studies conducted by aerospace contractors for NASA Headquarters. The Contracting Officer's Representative and Study Technical Manager was Brian Pritchard. The Boeing study manager was Gordon R. Woodcock.

The study was conducted by Boeing Aerospace Company and its team of subcontractors:

Arthur D. Little, Inc. (ADL)	Materials Processing in Space
Battelle Columbus Laboratories	Materials Processing in Space
ECON, Inc.	Pricing Policies and Economic Benefits
Environmental Research Institute of Michigan (ERIM)	Earth Observation Missions
Hamilton Standard	Environmental Control and Life Support Equipment
Intermetrics, Inc.	Software
Life Systems, Inc. (LSI)	Environmental Control and Life Support Equipment
Microgravity Research Associates (MRA)	Materials Processing in Space
National Behavioral Systems (NBS)	Crew Accommodations and Architectural Influences
RCA Astro-Electronics	Communications Spacecraft
Science Applications, Inc. (SAI)	Space Science

This document is one of seven final report documents:

D180-27477-1	Volume 1, Executive Summary
D180-27477-2	Volume 2, Mission Analysis
D180-27477-3	Volume 3, Requirements
D180-27477-4	Volume 4, Architectural Options, Subsystems, Technology, and Programmatics
D180-27477-5-1	Volume 5-1, National Defense Missions and Space Station Architectural Options Final Report (SECRET)
D180-27477-5-2	Volume 5-2, National Defense Missions and Space Station Architectural Options, Final Briefing (SECRET)
D180-27477-6	Volume 6, Final Briefing

D180-27477-7-1	Volume 7-1, Science and Applications Missions Data Book
D180-27477-7-2	Volume 7-2, Commerical Missions Data Book
D180-27477-7-3	Volume 7-3, Technology Demonstration Missions Data Book
D180-27477-7-4	Volume 7-4, Architectural Options, Technology, and Programmatics Data Book
D180-27477-7-5	Volume 7-5, Mission Analysis Data Book

Note: The volume 7 data books will be distributed to a limited number of requestors.

The study task descriptions and a final report typical cross reference guide are found in Appendix 1.

The Boeing and subcontractor team member are listed in Appendix 2.

Acronyms and abbreviations are listed in Appendix 3.

PREFACE

This volume 7-5 contains the printouts of the automated manifesting and operations analysis software. The following cases were run:

Vol. 7-5 Section No.	Scenario/Mission Model Ref. Name	Scenario	Space Station Yes	Space Station No	Inclination High	Inclination Low	OTV Space Based	OTV Ground Based
1	A-1	Mission Driven	X		X	X	X	
2	B-1	Station Constrained	X		X	X	X	
3	C	Mission Driven		X	X	X		X

D180-27477-7

VOLUME 7-5C
DATA BOOK

Mission Analysis

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7.5.3 Mission Driven Scenario C

Appendix 1 Summary of Study Tasks and Final Report Topical Cross References
Appendix 2 Key Team Members
Appendix 3 Acronyms and Abbreviations

7.5.1 Mission Driven Scenario A-1

****
* PAYLOADS DATA SHEET ONE *
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NO.	CODE	NAME	ORBIT ALT	ORBIT INCL	DELTA V'S UP	DELTA V'S DOWN	DELTA V'S A/B	MASSES PAYLD	MASSES SUPT	MASSES RET	LENGTHS PAYLD	LENGTHS SUPT.	PAYLD DIA	POWER KW	INTER VOLUME	MANIF RESTR
1	S001	EARTH OBSERV PALLET	400.	98.0	0.	0.	0.	3.50	2.00	3.50	7.00	2.00	4.00	3.50	2.50	0
2	S002	SYNTH APERTURE RADAR	400.	98.0	0.	0.	0.	2.50	1.00	2.50	6.00	2.00	4.00	10.00	1.00	0
3	S003	HETERODYNING CO2 LIDAR	400.	98.0	0.	0.	0.	1.20	1.00	2.50	4.00	1.00	4.00	1.00	1.00	0
4	S004	UPPER ATMOS RESEARCH PKG	400.	98.0	0.	0.	0.	4.00	2.00	4.00	7.00	2.00	4.20	2.15	0.90	0
5	OT03	SPACE STATION MODULES	400.	98.0	0.	0.	0.	11.00	0.00	11.00	7.00	0.00	4.00	15.00	0.00	0
6	OT04	HI-INCL STATION RESUPPLY	400.	98.0	0.	0.	0.	8.00	0.00	8.00	6.00	0.00	4.40	1.00	0.00	0
7	SP01	SPACE SCIENCE SUBSATELLITE	400.	98.0	0.	0.	0.	2.40	1.00	2.40	4.00	1.00	4.00	0.00	0.00	0
8	SP02	SPACE PHYSICS PALLET	400.	98.0	0.	0.	0.	10.00	4.00	10.00	5.00	2.00	4.00	10.00	2.00	0
9	SA01	VLBI/COSMIC RAY PKG	400.	98.0	0.	0.	0.	10.00	2.00	10.00	9.00	3.00	4.00	2.00	1.00	0
10	SL08	RAD BIOLOGY IN SM MAMMALS	400.	98.0	0.	0.	0.	0.30	0.00	0.00	0.00	0.00	0.00	0.60	0.40	0
11	SL01	HUMAN LIFE SI CARRY-ONS	500.	29.0	0.	0.	0.	0.41	0.00	0.41	0.00	0.00	0.00	1.70	3.40	0
12	SL02	SMALL MAMMALS CARRY-ONS	500.	29.0	0.	0.	0.	1.58	0.00	0.00	0.00	0.00	0.00	4.00	3.40	0
13	SL03	PLANT DEVEL CARRY-ONS	500.	29.0	0.	0.	0.	0.14	0.00	0.00	0.00	0.00	0.00	0.50	1.00	0

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14	SL04	LIFESCIENCES RES FAC	500.	29.0	0.	0.	0.	5.56	3.00	5.56	7.00	2.00	4.40	12.20	0.00	3
15	SL05	CENTRIFUGE (ADD TO LSRF)	500.	29.0	0.	0.	0.	0.50	5.20	0.50	3.00	7.00	4.20	4.00	0.00	3
16	SL06	CLOSED ENV LSS EXPT MOD	500.	29.0	0.	0.	0.	3.30	2.00	3.30	5.00	2.00	4.20	9.70	0.00	3
17	CM01	MATLS SCIENCE LAB	500.	29.0	0.	0.	0.	12.00	4.00	12.00	7.00	2.00	4.00	25.00	0.00	0
18	CM02	CRYSTAL GROWTH FACTOR/PLAT	500.	29.0	0.	0.	0.	10.00	2.00	10.00	7.00	2.00	4.20	0.00	0.00	0
19	CM03	CRYSTAL GROWTH RESUP-1	500.	29.0	0.	0.	0.	4.00	1.00	4.00	2.00	4.00	2.00	0.00	0.00	0
20	CM04	CRYSTAL GROWTH RESUP-2	500.	29.0	0.	0.	0.	12.50	7.00	12.50	4.00	4.00	4.00	0.00	0.00	0
21	SA02	ASTRO TELESCOPE CLUSTER	500.	29.0	0.	0.	0.	20.00	5.00	20.00	12.00	3.00	4.00	4.00	2.00	0
22	SA03	ASTROPHYSICS FREE-FLYER	500.	29.0	0.	0.	0.	17.00	2.00	17.00	12.00	2.00	0.00	0.00	0.00	0
23	SA04	ASTROPHYSICS OBSERVATORIES	500.	29.0	0.	0.	0.	15.00	4.00	15.00	4.00	4.00	4.20	1.00	0.00	0
24	CC01	SUSS-CLASS COMSAT	500.	29.0	0.	0.	0.	7.00	0.00	0.00	4.50	0.00	4.20	0.00	0.00	0
25	CC02	INTELSAT-6A CLASS COMSAT	35786.	0.0	4300.	4300.	0.	1.80	0.00	0.00	4.00	0.00	4.20	0.00	0.00	0
26	CC03	INTELSAT-7,7A CLASS COMSAT	35786.	0.0	4300.	4300.	0.	5.00	0.00	0.00	6.00	0.00	4.20	0.00	0.00	0
27	CC04	MULTIBEAM COMM. SATELLITE	35786.	0.0	4300.	4300.	0.	5.00	2.00	0.00	8.00	3.00	4.40	0.00	0.00	0
28	CC05	RECONFIGURABLE COMM. SATELLITE	35786.	0.0	4300.	4300.	0.	1.80	0.20	0.00	4.40	2.00	4.00	0.00	0.00	0

29	CM05	CONT FLOW ELEC-TROPH PLATFORM	500.	29.0	0.	0.	0.	7.00	2.00	7.00	6.00	2.00	4.20	0.00	0.00	0
30	CM06	CONTINUOUS FLOW ELECTRO RESUPP	500.	29.0	0.	0.	0.	25.00	2.00	25.00	12.00	2.00	4.20	2.00	0.00	0
31	CM07	GLASS PROC PLANT	500.	29.0	0.	0.	0.	15.00	5.00	15.00	10.00	2.00	4.20	10.60	0.00	0
32	CM08	GLASSPROC OPTICALFIBERS RESUPP	500.	29.0	0.	0.	0.	25.00	2.00	25.00	12.00	2.00	4.20	0.00	0.00	0
33	OT01	LOW INCL STA MODULE DEL	500.	29.0	0.	0.	0.	22.00	0.00	22.00	14.00	0.00	4.20	20.00	0.00	3
34	OT02	LOW INCL STA RESUPPLY	500.	29.0	0.	0.	0.	15.00	0.00	15.00	8.00	0.00	4.20	0.00	0.00	3
35	OT05	HI-ALT STA RESUPPLY	500.	29.0	4546.	4546.	761.	6.00	0.00	5.00	4.00	0.00	4.20	0.00	0.00	0
36	TM01	CONSTR,STORAGE, & HANGAR	500.	29.0	0.	0.	0.	2.00	2.00	0.00	2.50	2.00	4.20	1.00	0.00	0
37	TP01	PROP TRANSFER & STORAGE	500.	29.0	0.	0.	0.	10.00	0.50	3.00	7.00	0.50	4.20	1.00	0.00	3
38	TP02	OTV MAINT TECH DEMOS	500.	29.0	0.	0.	0.	3.60	2.00	3.60	10.90	2.50	4.20	1.00	0.00	0
39	TS01	SATELLITE ASSY & SERVICE	500.	29.0	0.	0.	0.	2.60	2.00	2.60	7.90	2.50	4.20	1.00	0.00	0
40	TE01	LARGE POWER SYS TECHNOLOGY	500.	29.0	0.	0.	0.	1.20	0.10	1.20	2.00	2.00	4.20	0.00	0.00	0
41	TC01	ROBOTICS TECH DEMO	500.	29.0	0.	0.	0.	3.60	0.50	3.60	1.80	0.10	1.00	3.00	0.00	0
42	TM02	PRECISION OPT CONSTR & TEST	500.	29.0	0.	0.	0.	5.00	2.00	5.00	5.00	2.00	4.20	4.00	0.00	0
43	TM03	PASSIVE MICW RADIOMETER	500.	29.0	0.	0.	0.	3.00	3.00	3.00	13.50	2.50	4.20	4.00	0.00	0

44	TE02	LIQ DROPLET RADIATOR	500.	29.0	0.	0.	0.	3.60	0.50	3.60	10.00	1.00	2.00	2.00	0.00	0
45	TS02	TECH DEVEL CARRY-ONS	500.	29.0	0.	0.	0.	0.50	0.00	0.50	0.10	0.10	0.00	0.50	2.00	0
46	SA05	LARGE RADIO TELESCOPE	500.	29.0	0.	0.	0.	5.00	5.00	5.00	7.00	3.00	4.20	0.00	0.00	0

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* PAYLOADS DATA SHEET TWO *
****

NO.	CODE	NAME	OPS CODE	POINT'G DIR	TIMES UP/ DN	TIMES ON ORB	TIMES USED DAYS	TIMES SERV IVA	TIMES SERV EVA	TIMES EXPT OPS	TIMES SERV FREQ	LENGTH BEAM FAB	NO OF APP	NO OF MODULES
1	S001	EARTH OBSERV PALLET	SPCL	EARTH	2.0	0.0	300.0	16.0	16.0	150.0	1.0	0.0	5	1
2	S002	SYNTH APERTURE RADAR	SPCL	EARTH	2.0	0.0	10.0	2.0	2.0	5.0	1.0	0.0	2	1
3	S003	HETERODYNING CO2 LIDAR	SPXX	EARTH	2.0	0.0	50.0	2.0	5.0	5.0	2.0	0.0	0	0
4	S004	UPPER ATMOS RESEARCH PKG	SPCL	EARTH	2.0	0.0	200.0	35.0	19.0	145.0	2.0	0.0	2	1
5	OT03	SPACE STATION MODULES	SSSS	NONE	2.0	0.0	365.0	150.0	10.0	0.0	0.0	0.0	0	0
6	OT04	HI-INCL STATION RESUPPLY	SORS	NONE	2.0	0.0	365.0	0.0	0.0	0.0	0.0	0.0	0	0
7	SP01	SPACE SCIENCE SUBSATELLITE	FSXX	NONE	2.0	0.0	365.0	0.0	5.0	10.0	1.0	0.0	0	0
8	SP02	SPACE PHYSICS PALLET	SPCM	EARTH	2.0	0.0	36.0	17.0	14.0	54.0	2.0	0.0	20	3
9	SA01	VLBI/COSMIC RAY PKG	SPCL	INERT	2.0	0.0	365.0	8.0	9.0	67.0	2.0	0.0	2	0
10	SL08	RAD BIOLOGY IN SM MAMMALS	SSSA	NONE	2.0	0.0	365.0	16.0	0.0	30.0	4.0	0.0	0	0
11	SL01	HUMAN LIFE SI CARRY-ONS	SSSA	NONE	2.0	0.0	365.0	16.0	0.0	73.0	12.0	0.0	0	0
12	SL02	SMALL MAMMALS CARRY-ONS	SSSA	NONE	2.0	0.0	365.0	133.0	0.0	41.0	12.0	0.0	0	0
13	SL03	PLANT DEVEL	SSSA	NONE	2.0	0.0	365.0	27.5	0.0	14.0	12.0	0.0	0	0

CARRY-ONS

14	SL04	LIFESCIENCES RES FAC	SPXX	NONE	2.0	0.0	365.0	145.0	0.0	191.0	12.0	0.0	0	0
15	SL05	CENTRIFUGE (ADD TO LSRF)	SSCL	NONE	2.0	0.0	365.0	240.0	0.0	91.0	12.0	0.0	0	1
16	SL06	CLOSED ENV LSS EXPT MOD	SPCL	NONE	2.0	0.0	365.0	24.0	0.0	547.5	12.0	0.0	0	1
17	CM01	MATLS SCIENCE LAB	SPXX	NONE	2.0	0.0	130.0	60.0	0.0	300.0	4.0	0.0	0	0
18	CM02	CRYSTAL GROWTH FACTORY/PLAT	PMCL	NONE	2.0	0.0	365.0	5.0	4.0	0.0	4.0	0.0	0	1
19	CM03	CRYSTAL GROWTH RESUP-1	PMXX	NONE	2.0	0.0	2.0	2.0	2.0	0.0	3.0	0.0	0	1
20	CM04	CRYSTAL GROWTH RESUP-2	PMCL	NONE	2.0	0.0	2.0	2.0	2.0	0.0	4.0	0.0	0	1
21	SA02	ASTRO TELESCOPE CLUSTER	SPXX	INERT	2.0	0.0	365.0	17.0	6.0	65.0	4.0	0.0	0	0
22	SA03	ASTROPHYSICS FREE-FLYER	FMXM	NONE	2.0	0.0	365.0	0.0	2.0	72.0	1.0	0.0	0	0
23	SA04	ASTROPHYSICS OBSERVATORIES	FMXM	NONE	2.0	0.0	365.0	0.0	6.0	0.0	1.0	0.0	0	0
24	CC01	SUSS-CLASS COMSAT	FXXX	NONE	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
25	CC02	INTELSAT-6A CLASS COMSAT	FXXX	NONE	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
26	CC03	INTELSAT-7,7A CLASS COMSAT	FXCL	NONE	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	4	0
27	CC04	MULTIBEAM COMM. SATELLITE	SSCM	NONE	2.0	2.0	0.0	0.0	0.0	0.0	0.0	4.4	10	2
28	CC05	RECONFIGURABLE	FXCM	NONE	12.0	7.0	7.0	3.0	9.0	0.0	1.0	0.0	2	2

COMM. SATELLITE

29	CM05	CONT FLOW ELEC-TROPH PLATFORM	PMCL	NONE	2.0	0.0	365.0	0.0	4.0	300.0	0.0	0.0	0	1
30	CM06	CONTINUOUS FLOW ELECTRO RESUPP	PMXL	NONE	2.0	0.0	0.0	0.0	12.0	12.0	4.0	0.0	0	0
31	CM07	GLASS PROC PLANT	SPCL	NONE	2.0	0.0	365.0	90.0	10.0	50.0	4.0	0.0	0	0
32	CM08	GLASSPROC OPTICA LFIBERS RESUPP	SPCL	NONE	2.0	0.0	0.0	8.0	8.0	8.0	8.0	0.0	1	2
33	OT01	LOW INCL STA MODULE DEL	SSSS	NONE	2.0	0.0	365.0	150.0	10.0	0.0	0.0	0.0	0	0
34	OT02	LOW INCL STA RESUPPLY	SORS	NONE	2.0	0.0	365.0	0.0	0.0	0.0	0.0	0.0	0	0
35	OT05	HI-ALT STA RESUPPLY	OMSB	NONE	2.0	5.0	365.0	0.0	0.0	0.0	0.0	0.0	0	0
36	TM01	CONSTR,STORAGE, & HANGAR	SPCM	NONE	2.0	0.0	20.0	0.0	0.0	10.0	1.0	0.0	120	2
37	TP01	PROP TRANSFER & STORAGE	SPCL	NONE	4.0	0.0	20.0	0.0	0.0	10.0	1.0	0.0	0	1
38	TP02	OTV MAINT TECH DEMOS	SSCL	NONE	2.0	0.0	20.0	0.0	0.0	10.0	1.0	0.0	0	1
39	TS01	SATELLITE ASSY & SERVICE	SSCL	NONE	2.0	0.0	90.0	0.0	0.0	90.0	1.0	0.0	0	1
40	TE01	LARGE POWER SYS TECHNOLOGY	SSCL	NONE	2.0	0.0	80.0	0.0	0.0	80.0	1.0	0.0	0	2
41	TC01	ROBOTICS TECH DEMO	SSCM	NONE	2.0	0.0	90.0	0.0	0.0	90.0	1.0	0.0	0	0
42	TM02	PRECISION OPT CONSTR & TEST	SPCH	INERT	2.0	0.0	50.0	0.0	0.0	50.0	1.0	0.0	7	82
43	TM03	PASSIVE MICW	SPCM	EARTH	2.0	0.0	148.0	0.0	0.0	148.0	0.0	0.0	252	3



RADIOMETER

44 TE02 LIQ DROPLET RADIATOR	SPCL	INERT	2.0	0.0	20.0	0.0	0.0	20.0	1.0	0.0	0	0
45 TS02 TECH DEVEL CARRY-ONS	SSSA	NONE	2.0	0.0	25.0	5.0	5.0	20.0	0.0	0.0	0	0
46 SA05 LARGE RADIO TELESCOPE	FMCH	NONE	2.0	0.0	365.0	5.0	5.0	5.0	1.0	0.0	0	0

NO.	KEY	PAYLOAD DESCRIPTION	MASS UP	MASS DOWN	LENGTH	DELTA V UP	DELTA V DOWN	DELTA V A/B	CONSTR-UCTION	MANIFEST RESTRICT ON	TIME ORBIT
1	S001	EARTH OBSERV PALLET	3.50	3.50	7.00	0.	0.	0.	YES	0	2.0
2	S002	SYNTH APERTURE RADAR	2.50	2.50	6.00	0.	0.	0.	YES	0	2.0
3	S003	HETERODYNING CO2 LIDAR	1.20	2.50	4.00	0.	0.	0.	NO	0	2.0
4	S004	UPPER ATMOS RESEARCH PKG	4.00	4.00	7.00	0.	0.	0.	YES	0	2.0
5	OT03	SPACE STATION MODULES	11.00	11.00	7.00	0.	0.	0.	NO	0	2.0
6	OT04	HI-INCL STATION RESUPPLY	8.00	8.00	6.00	0.	0.	0.	NO	0	2.0
7	SP01	SPACE SCIENCE SUBSATELLITE	2.40	2.40	4.00	0.	0.	0.	NO	0	2.0
8	SP02	SPACE PHYSICS PALLET	10.00	10.00	5.00	0.	0.	0.	YES	0	2.0
9	SA01	VLBI/COSMIC RAY PKG	10.00	10.00	9.00	0.	0.	0.	YES	0	2.0
10	SL08	RAD BIOLOGY IN SM MAMMALS	0.30	0.00	0.00	0.	0.	0.	NO	0	2.0
11	SL01	HUMAN LIFE SI CARRY-ONS	0.41	0.41	0.00	0.	0.	0.	NO	0	2.0
12	SL02	SMALL MAMMALS CARRY-ONS	1.58	0.00	0.00	0.	0.	0.	NO	0	2.0
13	SL03	PLANT DEVEL CARRY-ONS	0.14	0.00	0.00	0.	0.	0.	NO	0	2.0
14	SL04	LIFESCIENCES RES FAC	5.56	5.56	7.00	0.	0.	0.	NO	3	2.0

NO.	KEY	PAYLOAD DESCRIPTION	MASS UP	MASS DOWN	LENGTH	DELTA V UP	DELTA V DOWN	A/B	CONSTR-UCTION	MANIFEST RESTRICT ON	TIME ORBIT
15	SL05	CENTRIFUGE (ADD TO LSRF)	0.50	0.50	3.00	0.	0.	0.	YES	3	2.0
16	SL06	CLOSED ENV LSS EXPT MOD	3.30	3.30	5.00	0.	0.	0.	YES	3	2.0
17	CM01	MATLS SCIENCE LAB	12.00	12.00	7.00	0.	0.	0.	NO	0	2.0
18	CM02	CRYSTAL GROWTH FACTORY/PLAT	10.00	10.00	7.00	0.	0.	0.	YES	0	2.0
19	CM03	CRYSTAL GROWTH RESUP-1	4.00	4.00	2.00	0.	0.	0.	NO	0	2.0
20	CM04	CRYSTAL GROWTH RESUP-2	12.50	12.50	4.00	0.	0.	0.	YES	0	2.0
21	SA02	ASTRO TELESCOPE CLUSTER	20.00	20.00	12.00	0.	0.	0.	NO	0	2.0
22	SA03	ASTROPHYSICS FREE-FLYER	17.00	17.00	12.00	0.	0.	0.	NO	0	2.0
23	SA04	ASTROPHYSICS OBSERVATORIES	15.00	15.00	4.00	0.	0.	0.	NO	0	2.0
24	CC01	SUSS-CLASS COMSAT	7.00	0.00	4.50	0.	0.	0.	NO	0	2.0
25	CC02	INTELSAT-6A CLASS COMSAT	1.80	0.00	4.00	4300.	4300.	0.	NO	0	2.0
26	CC03	INTELSAT-7,7A CLASS COMSAT	5.00	0.00	6.00	4300.	4300.	0.	YES	0	2.0
27	CC04	MULTIBEAM COMM. SATELLITE	5.00	0.00	8.00	4300.	4300.	0.	YES	0	2.0
28	CC05	RECONFIGURABLE COMM. SATELLITE	1.80	0.00	4.40	4300.	4300.	0.	YES	0	2.0

NO.	KEY	PAYLOAD DESCRIPTION	MASS UP	MASS DOWN	LENGTH	DELTA V UP	DELTA V DOWN	DELTA V A/B	CONSTR-UCTION	MANIFEST RESTRICT ON	TIME ORBIT
29	CM05	CONT FLOW ELEC-TROPH PLATFORM	7.00	7.00	6.00	0.	0.	0.	YES	0	2.0
30	CM06	CONTINUOUS FLOW ELECTRO RESUPP	25.00	25.00	12.00	0.	0.	0.	NO	0	2.0
31	CM07	GLASS PROC PLANT	15.00	15.00	10.00	0.	0.	0.	YES	0	2.0
32	CM08	GLASSPROC OPTICA LFIBERS RESUPP	25.00	25.00	12.00	0.	0.	0.	YES	0	2.0
33	OT01	LOW INCL STA MODULE DEL	22.00	22.00	14.00	0.	0.	0.	NO	3	2.0
34	OT02	LOW INCL STA RESUPPLY	15.00	15.00	8.00	0.	0.	0.	NO	3	2.0
35	OT05	HI-ALT STA RESUPPLY	6.00	5.00	4.00	4546.	4546.	761.	NO	0	2.0
36	TM01	CONSTR,STORAGE, & HANGAR	2.00	0.00	2.50	0.	0.	0.	YES	0	2.0
37	TP01	PROP TRANSFER & STORAGE	10.00	3.00	7.00	0.	0.	0.	YES	3	2.0
38	TP02	OTV MAINT TECH DEMOS	3.60	3.60	10.90	0.	0.	0.	YES	0	2.0
39	TS01	SATELLITE ASSY & SERVICE	2.60	2.60	7.90	0.	0.	0.	YES	0	2.0
40	TE01	LARGE POWER SYS TECHNOLOGY	1.20	1.20	2.00	0.	0.	0.	YES	0	2.0
41	TC01	ROBOTICS TECH DEMO	3.60	3.60	1.80	0.	0.	0.	YES	0	2.0
42	TM02	PRECISION OPT CONSTR & TEST	5.00	5.00	5.00	0.	0.	0.	YES	0	2.0

43	TM03	PASSIVE MICW RADIOMETER	3.00	3.00	13.50	0.	0.	0.	YES	0	2.0
44	TE02	LIQ DROPLET RADIATOR	3.60	3.60	10.00	0.	0.	0.	YES	0	2.0
45	TS02	TECH DEVEL CARRY-ONS	0.50	0.50	0.10	0.	0.	0.	NO	0	2.0
46	SA05	LARGE RADIO TELESCOPE	5.00	5.00	7.00	0.	0.	0.	YES	0	2.0

NO.	KEY	PAYLOAD DESCRIPTION	FLIGHT SUPPORT TRAFFIC MODEL TRAFFIC MODEL YEAR															
			90	91	92	93	94	95	96	97	98	99	0	1	2	3	4	5
1	S001	EARTH OBSERV PALLET	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
2	S002	SYNTH APERTURE RADAR	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
3	S003	HETERODYNING CO2 LIDAR	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
4	S004	UPPER ATMOS RESEARCH PKG	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
5	OT03	SPACE STATION MODULES	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0
6	OT04	HI-INCL STATION RESUPPLY	0	0	1	2	2	2	2	2	2	2	2	2	2	2	2	2
7	SP01	SPACE SCIENCE SUBSATELLITE	0	0	1	0	-1	0	1	0	0	-1	0	0	0	0	0	0
8	SP02	SPACE PHYSICS PALLET	0	0	0	1	0	0	0	-1	0	0	1	0	0	0	0	0
9	SA01	VLBI/COSMIC RAY PKG	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
10	SL08	RAD BIOLOGY IN SM MAMMALS	0	0	0	0	0	0	0	1	0	0	-1	0	0	1	0	0
11	SL01	HUMAN LIFE SI CARRY-ONS	0	1	0	0	0	0	0	0	0	0	-1	0	0	0	0	0
12	SL02	SMALL MAMMALS CARRY-ONS	0	1	0	0	0	-1	0	0	0	0	0	0	0	0	0	0
13	SL03	PLANT DEVEL CARRY-ONS	0	0	1	0	0	0	0	-1	0	0	0	0	0	0	0	0
14	SL04	LIFESCIENCES RES FAC	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0

15	SL05	CENTRIFUGE (ADD TO LSRF)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
16	SL06	CLOSED ENV LSS EXPT MOD	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
NO.	KEY	PAYLOAD DESCRIPTION	TRAFFIC MODEL YEAR															
			90	91	92	93	94	95	96	97	98	99	0	1	2	3	4	5
17	CM01	MATLS SCIENCE LAB	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
18	CM02	CRYSTAL GROWTH FACTORY/PLAT	0	0	0	1	0	1	0	1	0	1	0	1	0	1	0	0
19	CM03	CRYSTAL GROWTH RESUP-1	0	0	0	0	3	3	3	0	0	0	0	0	0	0	0	0
20	CM04	CRYSTAL GROWTH RESUP-2	0	0	0	0	0	0	0	3	4	5	5	6	6	6	6	6
21	SA02	ASTRO TELESCOPE CLUSTER	0	1	0	0	0	0	-1	0	1	0	0	0	0	-1	0	0
22	SA03	ASTROPHYSICS FREE-FLYER	0	0	0	1	0	0	0	0	-1	0	0	1	0	0	0	0
23	SA04	ASTROPHYSICS OBSERVATORIES	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	CC03	INTELSAT-7,7A CLASS COMSAT	0	0	0	0	0	1	1	1	1	1	1	1	1	2	2	2
27	CC04	MULTIBEAM COMM. SATELLITE	0	0	0	0	0	1	1	1	1	0	0	1	1	0	1	1
28	CC05	RECONFIGURABLE COMM. SATELLITE	0	1	1	1	1	2	3	4	4	4	4	4	4	4	4	4
29	CM05	CONT FLOW ELEC-TROPH PLATFORM	1	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0
30	CM06	CONTINUOUS FLOW ELECTRO RESUPP	1	4	4	5	7	9	11	12	14	16	17	20	20	20	20	20

NO.	KEY	PAYLOAD DESCRIPTION	TRAFFIC MODEL YEAR 90	91	92	93	94	95	96	97	98	99	0	1	2	3	4	5
31	CM07	GLASS PROC PLANT	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0
32	CM08	GLASSPROC OPTICA LFIBERS RESUPP	0	0	2	2	2	3	3	4	5	6	8	10	12	15	15	15
33	OT01	LOW INCL STA MODULE DEL	2	2	0	0	0	1	2	0	0	0	0	0	0	0	0	0
34	OT02	LOW INCL STA RESUPPLY	4	4	4	4	4	4	8	8	8	8	8	8	8	8	8	8
35	OT05	HI-ALT STA RESUPPLY	0	0	0	0	0	2	2	2	2	2	2	2	2	2	2	2
36	TM01	CONSTR,STORAGE, & HANGAR	0	1	-1	0	0	0	0	0	0	0	0	0	0	0	0	0
37	TP01	PROP TRANSFER & STORAGE	0	0	1	-1	0	0	0	0	0	0	0	0	0	0	0	0
38	TP02	OTV MAINT TECH DEMOS	0	0	0	1	-1	0	0	0	0	0	0	0	0	0	0	0
39	TS01	SATELLITE ASSY & SERVICE	0	0	0	0	1	-1	0	0	0	0	0	0	0	0	0	0
40	TE01	LARGE POWER SYS TECHNOLOGY	0	0	0	0	0	1	-1	0	0	0	0	0	0	0	0	0
41	TC01	ROBOTICS TECH DEMO	0	0	0	0	0	0	0	1	-1	0	0	0	0	0	0	0
42	TM02	PRECISION OPT CONSTR & TEST	0	0	0	0	0	0	0	0	0	0	1	-1	0	0	0	0
43	TM03	PASSIVE MICW RADIOMETER	0	0	0	0	0	0	0	0	0	0	0	0	1	-1	0	0
44	TE02	LIQ DROPLET RADIATOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

45	TS02	TECH DEVEL CARRY-ONS	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	SA05	LARGE RADIO TELESCOPE	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0

```
MODE =    2
SHUTTLE PLD =       29.480
PLD BAY LENGTH =       18.290
SHUTTLE CPF =       71.000
 STS TURNAROUND =         35.000 DAYS
OTV: INERT =        4.340    ISP =      475.000    LENGTH =       14.000    PROP =       33.000    ASE MASS =        2.500
OTV COST =      45.000
OTV IS AEROBRAKED

 TMS:  INERT=      1.500 CAB MASS=      3.000 ISP=    300.000 LENGTH=      1.100
SCAVENGING SIMULATED ON S/C LAUNCHES
TANKER & ASE INERT MASS =         3.500
TANKING EFFICIENCY =        0.950
MINI-TANKER MASS =      1.800          LENGTH =        6.051
CAPACITY=       16.000          CG =         2.048
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YEAR 1990

TMS MISSION SUMMARY

KEY	TITLE	CODE	TMS MISSION TYPE AUTO	TMS MISSION TYPE MAN	TMS MISSION TYPE RET/DEPLOY	TMS MISSION TYPE SELF-PROP	NO. USES	PROP RQD
SA04	ASTROPHYSICS	FMXM		X			1.0	0.4
CM05	CONT FLOW ELEC-	PMCL		X			0.0	0.4
CM06	CONTINUOUS FLOW	PMXL		X			4.0	0.4
OT01	LOW INCL STA	SSSS						
OT02	LOW INCL STA	SORS						

PAYLOAD 23 ASTROPHYSICS OBSERVATORIES
NO OTV REQD
PAYLOAD 29 CONT FLOW ELEC- TROPH PLATFORM
NO OTV REQD
PAYLOAD 30 CONTINUOUS FLOW ELECTRO RESUPP
NO OTV REQD
PAYLOAD 33 LOW INCL STA MODULE DEL
NO OTV REQD
PAYLOAD 34 LOW INCL STA RESUPPLY
NO OTV REQD

SORTED H ARRAY

INDEX	#FLTS	MASS	LENGTH	INCLIN
33	2	22.00	14.00	29.00
30	1	25.00	12.00	29.00
34	4	15.00	8.00	29.00
29	1	7.00	6.00	29.00
23	1	15.00	4.00	29.00

MANIFESTING RECORD

NP	WT AV	LEN AV	MAIN P/L #	MAIN P/L KEY	MAIN P/L #FL	MAIN P/L MASS	MAIN P/L LEN	SEC P/L #	SEC P/L KEY	SEC P/L #FL	SEC P/L MASS	SEC P/L LEN	MC	MF	SF	DM RQ	DM OK	FLTS MAN	CG	FRE LEN	FRE MASS
1	27.6	10.1	33	OT01	2	22.0	14.0	30	CM06	1	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	2	22.0	14.0	34	OT02	4	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	2	22.0	14.0	29	CM05	1	7.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	2	22.0	14.0	23	SA04	1	15.0	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	1	25.0	12.0	34	OT02	4	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	1	25.0	12.0	29	CM05	1	7.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	1	25.0	12.0	23	SA04	1	15.0	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	29	CM05	1	7.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	23	SA04	1	15.0	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	29	CM05	1	7.0	6.0	23	SA04	1	15.0	4.0	7	1	1	*		--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW 15.200																					
1	27.6	16.2	29	CM05	0	7.0	6.0	--	--	--	--	--	8	1	1	*		1	27.7	10.2	2.8
2	27.6	16.2	33	OT01	2	22.0	14.0	30	CM06	1	25.0	12.0	5	0	0	*		--	--	--	--
2	27.6	16.2	33	OT01	2	22.0	14.0	34	OT02	4	15.0	8.0	5	0	0	*		--	--	--	--
2	27.6	16.2	33	OT01	2	22.0	14.0	29	CM05	0	7.0	6.0	1	0	0	*		--	--	--	--
2	27.6	16.2	33	OT01	2	22.0	14.0	23	SA04	1	15.0	4.0	5	0	0	*		--	--	--	--
2	29.5	18.3	30	CM06	1	25.0	12.0	34	OT02	4	15.0	8.0	5	0	0			--	--	--	--
2	29.5	18.3	30	CM06	1	25.0	12.0	29	CM05	0	7.0	6.0	1	0	0			--	--	--	--

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2	29.5	18.3	30	CM06	1	25.0	12.0	23	SA04	1	15.0	4.0	6	0	0		--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	29	CM05	0	7.0	6.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	23	SA04	1	15.0	4.0	6	0	0	*	--	--	--	--
2	29.5	18.3	30	CM06	0	25.0	12.0	--	--	--	--	--	8	0	0	*	1	27.3	6.3	2.6
2	29.5	18.3	34	OT02	0	15.0	8.0	--	--	--	--	--	8	0	0	*	4	26.3	10.3	12.6
2	29.5	18.3	23	SA04	0	15.0	4.0	--	--	--	--	--	8	0	0	*	1	26.3	14.3	12.6

PROPELLANT NEEDED THIS YEAR = 0.
PROPELLANT LEFT FROM PRIOR YEAR = 0.
PROPELLANT DELIVERED BY MINITANKER = 15.
PROPELLANT DELIVERED BY ET SCAVENGING = 0.

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MANIFEST #	KEY REF	DESCRIPTION	MATCHED WITH	NO. FLTS	OTV USED	OTV EXP	P/L BAY LENGTH	LAUNCH MASS	TIME ON ORBIT	SP STA OPERATION
1	CM05	**CONT FLOW ELEC TROPH PLATFOR		1	0	0	14.2	29.5	2.0	C
2			CANT MANIF PLD	0	0	0	0.0	0.0	0.0	
3	CM06	CONTINUOUS FLOW ELECTRO RESUPP		1	0	0	12.0	26.9	2.0	
4	OT02	LOW INCL STA RESUPPLY		4	0	0	8.0	16.9	2.0	
5	SA04	ASTROPHYSICS OBSERVATORIES		1	0	0	4.0	16.9	2.0	

** - MANIFESTED WITH MINITANKER

NO. OF SHUTTLE FLIGHTS 7
NO. OF TMS OPS 5
NO. OF MANNED TMS OPS 5
NO. OF SELF:PROP SAT SERV OPS 0
TMS & SATELLITE PROPELLANT USED 1.78
NO. OF OTV REUSE FLIGHTS 0
NO. OF OTVS EXPENDED 0
SPACE STATION FLT SERVICE OPS 0
SPACE STATION CONSTR OPS 1
SPACE STATION PROP XFER OPS 1
HLLV FLIGHTS 0
FLEET TIME ON ORBIT = 14.0 DAYS
TOTAL FLEET TIME = 259.0 DAYS
IDEAL MIN FLEET SIZE = 0.83 VEHICLES

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YEAR 1991

TMS MISSION SUMMARY

KEY	TITLE	CODE	TMS MISSION TYPE AUTO	MAN	RET/DEPLOY	SELF-PROP	NO. USES	PROP RQD
OT03	SPACE STATION	SSSS						
SL01	HUMAN LIFE SI	SSSA						
SL02	SMALL MAMMALS	SSSA						
SA02	ASTRO TELESCOPE	SPXX						
SA04	ASTROPHYSICS	FMXM		X			1.0	0.4
CC05	RECONFIGURABLE	FXCM						
CM05	CONT FLOW ELEC-	PMCL		X			0.0	0.4
CM06	CONTINUOUS FLOW	PMXL		X			4.0	0.4
OT01	LOW INCL STA	SSSS						
OT02	LOW INCL STA	SORS						
TM01	CONSTR,STORAGE,	SPCM						
TS02	TECH DEVEL	SSSA						

THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
NOT MANIFESTED ON TRANSPORTATION

THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
NOT MANIFESTED ON TRANSPORTATION

THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
NOT MANIFESTED ON TRANSPORTATION
PAYLOAD 5 SPACE STATION MODULES
NO OTV REQD
PAYLOAD 11 HUMAN LIFE SI CARRY-ONS

THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
NOT MANIFESTED ON TRANSPORTATION
PAYLOAD 12 SMALL MAMMALS CARRY-ONS

THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
NOT MANIFESTED ON TRANSPORTATION
PAYLOAD 21 ASTRO TELESCOPE CLUSTER
NO OTV REQD
PAYLOAD 28 RECONFIGURABLE COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 9.315
PAYLOAD 30 CONTINUOUS FLOW ELECTRO RESUPP
NO OTV REQD
PAYLOAD 33 LOW INCL STA MODULE DEL
NO OTV REQD
PAYLOAD 34 LOW INCL STA RESUPPLY
NO OTV REQD

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PAYLOAD 36 CONSTR,STORAGE, & HANGAR
NO OTV REQD
PAYLOAD 45 TECH DEVEL CARRY-ONS

THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
NOT MANIFESTED ON TRANSPORTATION
SORTED H ARRAY

INDEX	#FLTS	MASS	LENGTH	INCLIN
33	2	22.00	14.00	29.00
21	1	20.00	12.00	29.00
30	4	25.00	12.00	29.00
34	4	15.00	8.00	29.00
5	2	11.00	7.00	98.00
28	1	1.80	4.40	0.00
36	1	2.00	2.50	29.00
302	1	4.00	1.50	29.00

MANIFESTING RECORD

NP	WT AV	LEN AV	*****MAIN P/L******** #	KEY	#FL	MASS	LEN	*****SEC P/L******** #	KEY	#FL	MASS	LEN	MC	MF	SF	DM RQ	DM OK	FLTS MAN	CG	FRE LEN	FRE MASS
2	27.6	16.2	33	OT01	2	22.0	14.0	21	SA02	1	20.0	12.0	5	0	0	*		--	--	--	--
2	27.6	16.2	33	OT01	2	22.0	14.0	30	CM06	4	25.0	12.0	5	0	0	*		--	--	--	--
2	27.6	16.2	33	OT01	2	22.0	14.0	34	OT02	4	15.0	8.0	5	0	0	*		--	--	--	--
2	27.6	16.2	33	OT01	2	22.0	14.0	5	OT03	2	11.0	7.0	4	0	0	*		--	--	--	--
2	27.6	16.2	33	OT01	2	22.0	14.0	28	CC05	1	1.8	4.4	5	0	0	*		--	--	--	--
2	27.6	16.2	33	OT01	2	22.0	14.0	36	TM01	1	2.0	2.5	5	0	0	*		--	--	--	--
2	27.6	16.2	33	OT01	2	22.0	14.0	302	TMS	1	4.0	1.5	7	0	0	*		--	--	--	--
2	29.5	18.3	21	SA02	1	20.0	12.0	30	CM06	4	25.0	12.0	5	0	0			--	--	--	--
2	29.5	18.3	21	SA02	1	20.0	12.0	34	OT02	4	15.0	8.0	5	0	0			--	--	--	--
2	29.5	18.3	21	SA02	1	20.0	12.0	5	OT03	2	11.0	7.0	4	0	0			--	--	--	--
2	29.5	18.3	21	SA02	0	20.0	12.0	28	CC05	0	1.8	4.4	8	0	0			1	26.2	1.9	7.7
2	29.5	18.3	21	SA02	0	20.0	12.0	36	TM01	1	2.0	2.5	1	0	0			--	--	--	--
2	29.5	18.3	21	SA02	0	20.0	12.0	302	TMS	1	4.0	1.5	1	0	0			--	--	--	--
2	29.5	18.3	30	CM06	4	25.0	12.0	34	OT02	4	15.0	8.0	5	0	0			--	--	--	--
2	29.5	18.3	30	CM06	4	25.0	12.0	5	OT03	2	11.0	7.0	4	0	0			--	--	--	--
2	29.5	18.3	30	CM06	4	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0			--	--	--	--
2	29.5	18.3	30	CM06	3	25.0	12.0	36	TM01	0	2.0	2.5	8	0	0			1	26.3	3.8	2.5
2	29.5	18.3	30	CM06	2	25.0	12.0	302	TMS	0	4.0	1.5	8	0	0			1	26.1	4.8	0.5
2	27.6	16.2	34	OT02	4	15.0	8.0	5	OT03	2	11.0	7.0	4	0	0	*		--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	28	CC05	0	1.8	4.4	1	0	0	*		--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	36	TM01	0	2.0	2.5	1	0	0	*		--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	302	TMS	0	4.0	1.5	1	0	0	*		--	--	--	--
2	15.5	18.3	5	OT03	2	11.0	7.0	28	CC05	0	1.8	4.4	1	0	0			--	--	--	--
2	15.5	18.3	5	OT03	2	11.0	7.0	36	TM01	0	2.0	2.5	1	0	0			--	--	--	--
2	15.5	18.3	5	OT03	2	11.0	7.0	302	TMS	0	4.0	1.5	1	0	0			--	--	--	--
2	29.5	18.3	33	OT01	0	22.0	14.0	--	--	--	--	--	8	0	0			2	26.9	4.3	-6.5
2	29.5	18.3	30	CM06	0	25.0	12.0	--	--	--	--	--	8	0	0			2	27.1	6.3	-9.5
2	29.5	18.3	34	OT02	0	15.0	8.0	--	--	--	--	--	8	0	0			4	26.0	10.3	0.5
2	15.5	18.3	5	OT03	0	11.0	7.0	--	--	--	--	--	8	0	0			2	25.0	11.3	4.5

PROPELLANT NEEDED THIS YEAR = 9.
PROPELLANT LEFT FROM PRIOR YEAR = 15.
PROPELLANT DELIVERED BY MINITANKER = 0.
PROPELLANT DELIVERED BY ET SCAVENGING = 0.

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MANI-FEST #	KEY REF	DESCRIPTION	MATCHED WITH	NO. FLTS	OTV USED	OTV EXP	P/L BAY LENGTH	LAUNCH MASS	TIME ON ORBIT	SP STA OPERATION
1	SA02	ASTRO TELESCOPE CLUSTER	RECONFIGURABLE COMM. SATELLITE	1	1	0	16.4	21.8	4.0	FS
2	CM06	CONTINUOUS FLOW ELECTRO RESUPP	CONSTR,STORAGE, & HANGAR	1	0	0	14.5	27.0	4.0	FS
3	CM06	CONTINUOUS FLOW ELECTRO RESUPP	TMS PROP.DELIV	1	0	0	13.5	29.0	2.0	FS
4	OT01	LOW INCL STA MODULE DEL		2	0	0	14.0	22.0	2.0	
5	CM06	CONTINUOUS FLOW ELECTRO RESUPP		2	0	0	12.0	25.0	2.0	
6	OT02	LOW INCL STA RESUPPLY		4	0	0	8.0	15.0	2.0	
7	OT03	SPACE STATION MODULES		2	0	0	7.0	11.0	2.0	

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** - MANIFESTED WITH MINITANKER

NO. OF SHUTTLE FLIGHTS 13
NO. OF TMS OPS 5
NO. OF MANNED TMS OPS 5
NO. OF SELF:PROP SAT SERV OPS 0
TMS & SATELLITE PROPELLANT USED 1.78
NO. OF OTV REUSE FLIGHTS 1
NO. OF OTVS EXPENDED 0
SPACE STATION FLT SERVICE OPS 3
SPACE STATION CONSTR OPS 2
SPACE STATION PROP XFER OPS 0
HLLV FLIGHTS 0
FLEET TIME ON ORBIT = 30.0 DAYS
TOTAL FLEET TIME = 485.0 DAYS
IDEAL MIN FLEET SIZE = 1.55 VEHICLES

YEAR 1992

TMS MISSION SUMMARY

KEY	TITLE	CODE	TMS MISSION TYPE AUTO	MAN	RET/DEPLOY	SELF-PROP	NO. USES	PROP RQD
OT03	SPACE STATION	SSSS						
OT04	HI-INCL STATION	SORS						
SP01	SPACE SCIENCE	FSXX				X	1.0	0.0
SA01	VLBI/COSMIC	SPCL						
SL01	HUMAN LIFE SI	SSSA						
SL02	SMALL MAMMALS	SSSA						
SL03	PLANT DEVEL	SSSA						
CM01	MATLS SCIENCE	SPXX						
SA02	ASTRO TELESCOPE	SPXX						
SA04	ASTROPHYSICS	FMXM		X			1.0	0.4
CC05	RECONFIGURABLE	FXCM						
CM05	CONT FLOW ELEC-	PMCL		X			0.0	0.4
CM06	CONTINUOUS FLOW	PMXL		X			4.0	0.4
CM07	GLASS PROC PLANT	SPCL						
CM08	GLASSPROC OPTICA	SPCL						
OT01	LOW INCL STA	SSSS						
OT02	LOW INCL STA	SORS						
TP01	PROP TRANSFER	SPCL						
TS02	TECH DEVEL	SSSA						

THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
NOT MANIFESTED ON TRANSPORTATION
PAYLOAD 5 SPACE STATION MODULES
NO OTV REQD
PAYLOAD 6 HI-INCL STATION RESUPPLY
NO OTV REQD
PAYLOAD 7 SPACE SCIENCE SUBSATELLITE
NO OTV REQD
PAYLOAD 9 VLBI/COSMIC RAY.PKG
NO OTV REQD
PAYLOAD 13 PLANT DEVEL CARRY-ONS

THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
NOT MANIFESTED ON TRANSPORTATION
PAYLOAD 17 MATLS SCIENCE LAB

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NO OTV REQD
PAYLOAD 28 RECONFIGURABLE COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 9.315
PAYLOAD 30 CONTINUOUS FLOW ELECTRO RESUPP
NO OTV REQD
PAYLOAD 31 GLASS PROC PLANT
NO OTV REQD
PAYLOAD 32 GLASSPROC OPTICA LFIBERS RESUPP
NO OTV REQD
PAYLOAD 34 LOW INCL STA RESUPPLY
NO OTV REQD
PAYLOAD 36 CONSTR,STORAGE, & HANGAR
NO OTV REQD
PAYLOAD 37 PROP TRANSFER & STORAGE
NO OTV REQD
SORTED H ARRAY

INDEX	#FLTS	MASS	LENGTH	INCLIN
30	4	25.00	12.00	29.00
32	2	25.00	12.00	29.00
31	1	15.00	10.00	29.00
9	1	10.00	9.00	98.00
34	4	15.00	8.00	29.00
5	2	11.00	7.00	98.00
17	1	12.00	7.00	29.00
37	1	10.00	7.00	29.00
6	1	8.00	6.00	98.00
28	1	1.80	4.40	0.00
7	1	2.40	4.00	98.00
301	1	3.00	3.00	29.00
36	-1	2.00	2.50	29.00
302	1	4.00	1.50	29.00

MANIFESTING RECORD

NP	WT AV	LEN AV	*****MAIN P/L******** #	KEY	#FL	MASS	LEN	*****SEC P/L******** #	KEY	#FL	MASS	LEN	MC	MF	SF	DM RQ	DM OK	FLTS MAN	CG	FRE LEN	FRE MASS
1	27.6	10.1	30	CM06	4	25.0	12.0	32	CM08	2	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	4	25.0	12.0	31	CM07	1	15.0	10.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	4	25.0	12.0	9	SA01	1	10.0	9.0	4	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	4	25.0	12.0	34	OT02	4	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	4	25.0	12.0	5	OT03	2	11.0	7.0	4	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	4	25.0	12.0	17	CM01	1	12.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	4	25.0	12.0	37	TP01	1	10.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	4	25.0	12.0	6	OT04	1	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	4	25.0	12.0	28	CC05	1	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	4	25.0	12.0	7	SP01	1	2.4	4.0	4	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	4	25.0	12.0	301	TMS	1	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	4	25.0	12.0	36	TM01	-1	2.0	2.5	1	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	4	25.0	12.0	302	TMS	1	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	31	CM07	1	15.0	10.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	9	SA01	1	10.0	9.0	4	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	34	OT02	4	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	5	OT03	2	11.0	7.0	4	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	17	CM01	1	12.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	37	TP01	1	10.0	7.0	5	1	1	*		--	--	--	--

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1	27.6	10.1	32	CM08	2	25.0	12.0	6	OT04	1	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	28	CC05	1	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	7	SP01	1	2.4	4.0	4	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	301	TMS	1	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	36	TM01	-1	2.0	2.5	1	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	302	TMS	1	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	9	SA01	1	10.0	9.0	4	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	34	OT02	4	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	5	OT03	2	11.0	7.0	4	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	17	CM01	1	12.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	37	TP01	1	10.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	6	OT04	1	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	28	CC05	1	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	7	SP01	1	2.4	4.0	4	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	301	TMS	1	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	36	TM01	-1	2.0	2.5	1	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	302	TMS	1	4.0	1.5	5	1	1	*		--	--	--	--
1	15.5	18.3	9	SA01	1	10.0	9.0	34	OT02	4	15.0	8.0	4	0	0			--	--	--	--
1	15.5	18.3	9	SA01	1	10.0	9.0	5	OT03	2	11.0	7.0	6	0	0			--	--	--	--
1	15.5	18.3	9	SA01	1	10.0	9.0	17	CM01	1	12.0	7.0	4	0	0			--	--	--	--
1	15.5	18.3	9	SA01	1	10.0	9.0	37	TP01	1	10.0	7.0	4	0	0			--	--	--	--
1	15.5	18.3	9	SA01	1	10.0	9.0	6	OT04	1	8.0	6.0	6	0	0			--	--	--	--
1	15.5	18.3	9	SA01	1	10.0	9.0	28	CC05	1	1.8	4.4	4	0	0			--	--	--	--

DOCKING MODULE ADDED

1	15.5	18.3	9	SA01	0	10.0	9.0	7	SP01	0	2.4	4.0	8	0	0		*	1	27.1	3.2	1.2
1	15.5	18.3	9	SA01	0	10.0	9.0	301	TMS	1	3.0	3.0	1	0	0			--	--	--	--
1	15.5	18.3	9	SA01	0	10.0	9.0	36	TM01	-1	2.0	2.5	1	0	0			--	--	--	--
1	15.5	18.3	9	SA01	0	10.0	9.0	302	TMS	1	4.0	1.5	1	0	0			--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	5	OT03	2	11.0	7.0	4	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	17	CM01	1	12.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	37	TP01	1	10.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	6	OT04	1	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	28	CC05	1	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	7	SP01	0	2.4	4.0	1	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	301	TMS	1	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	36	TM01	-1	2.0	2.5	1	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	302	TMS	1	4.0	1.5	7	1	1	*		--	--	--	--
1	15.5	18.3	5	OT03	2	11.0	7.0	17	CM01	1	12.0	7.0	4	0	0			--	--	--	--
1	15.5	18.3	5	OT03	2	11.0	7.0	37	TP01	1	10.0	7.0	4	0	0			--	--	--	--
1	15.5	18.3	5	OT03	2	11.0	7.0	6	OT04	1	8.0	6.0	6	0	0			--	--	--	--
1	15.5	18.3	5	OT03	2	11.0	7.0	28	CC05	1	1.8	4.4	4	0	0			--	--	--	--
1	15.5	18.3	5	OT03	2	11.0	7.0	7	SP01	0	2.4	4.0	1	0	0			--	--	--	--
1	15.5	18.3	5	OT03	2	11.0	7.0	301	TMS	1	3.0	3.0	4	0	0			--	--	--	--
1	15.5	18.3	5	OT03	2	11.0	7.0	36	TM01	-1	2.0	2.5	1	0	0			--	--	--	--
1	15.5	18.3	5	OT03	2	11.0	7.0	302	TMS	1	4.0	1.5	4	0	0			--	--	--	--
1	27.6	10.1	17	CM01	1	12.0	7.0	37	TP01	1	10.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	17	CM01	1	12.0	7.0	6	OT04	1	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	17	CM01	1	12.0	7.0	28	CC05	1	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	17	CM01	1	12.0	7.0	7	SP01	0	2.4	4.0	1	1	1	*		--	--	--	--
1	27.6	10.1	17	CM01	1	12.0	7.0	301	TMS	1	3.0	3.0	7	1	1	*		--	--	--	--
1	27.6	10.1	17	CM01	1	12.0	7.0	36	TM01	-1	2.0	2.5	1	1	1	*		--	--	--	--
1	27.6	10.1	17	CM01	1	12.0	7.0	302	TMS	1	4.0	1.5	7	1	1	*		--	--	--	--
1	27.6	10.1	37	TP01	1	10.0	7.0	6	OT04	1	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	37	TP01	1	10.0	7.0	28	CC05	1	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	37	TP01	1	10.0	7.0	7	SP01	0	2.4	4.0	1	1	1	*		--	--	--	--

PROPELLANT DELIVERED USING MINITANKER IS NOW 15.038

1	27.6	10.1	37	TP01	0	10.0	7.0	301	TMS	0	3.0	3.0	8	1	1	*		1	26.2	0.1	-3.0
2	29.5	18.3	30	CM06	4	25.0	12.0	32	CM08	2	25.0	12.0	5	0	0			--	--	--	--
2	29.5	18.3	30	CM06	4	25.0	12.0	31	CM07	1	15.0	10.0	5	0	0			--	--	--	--

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2	29.5	18.3	30	CM06	4	25.0	12.0	9	SA01	0	10.0	9.0	1	0	0		--	--	--	--	
2	29.5	18.3	30	CM06	4	25.0	12.0	34	OT02	4	15.0	8.0	5	0	0		--	--	--	--	
2	29.5	18.3	30	CM06	4	25.0	12.0	5	OT03	2	11.0	7.0	4	0	0		--	--	--	--	
2	29.5	18.3	30	CM06	4	25.0	12.0	17	CM01	1	12.0	7.0	5	0	0		--	--	--	--	
2	29.5	18.3	30	CM06	4	25.0	12.0	37	TP01	0	10.0	7.0	1	0	0		--	--	--	--	
2	29.5	18.3	30	CM06	4	25.0	12.0	6	OT04	1	8.0	6.0	4	0	0		--	--	--	--	
2	29.5	18.3	30	CM06	3	25.0	12.0	28	CC05	0	1.8	4.4	8	0	0		1	26.3	1.9	2.7	
2	29.5	18.3	30	CM06	3	25.0	12.0	7	SP01	0	2.4	4.0	1	0	0		--	--	--	--	
2	29.5	18.3	30	CM06	3	25.0	12.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--	
2	29.5	18.3	30	CM06	3	25.0	12.0	36	TM01	-1	2.0	2.5	1	0	0		--	--	--	--	
2	29.5	18.3	30	CM06	2	25.0	12.0	302	TMS	0	4.0	1.5	8	0	0		1	26.1	4.8	0.5	
2	29.5	18.3	32	CM08	2	25.0	12.0	31	CM07	1	15.0	10.0	5	0	0		--	--	--	--	
2	29.5	18.3	32	CM08	2	25.0	12.0	9	SA01	0	10.0	9.0	1	0	0		--	--	--	--	
2	29.5	18.3	32	CM08	2	25.0	12.0	34	OT02	4	15.0	8.0	5	0	0		--	--	--	--	
2	29.5	18.3	32	CM08	2	25.0	12.0	5	OT03	2	11.0	7.0	4	0	0		--	--	--	--	
2	29.5	18.3	32	CM08	2	25.0	12.0	17	CM01	1	12.0	7.0	5	0	0		--	--	--	--	
2	29.5	18.3	32	CM08	2	25.0	12.0	37	TP01	0	10.0	7.0	1	0	0		--	--	--	--	
2	29.5	18.3	32	CM08	2	25.0	12.0	6	OT04	1	8.0	6.0	4	0	0		--	--	--	--	
2	29.5	18.3	32	CM08	2	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--	
2	29.5	18.3	32	CM08	2	25.0	12.0	7	SP01	0	2.4	4.0	1	0	0		--	--	--	--	
2	29.5	18.3	32	CM08	2	25.0	12.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--	
2	29.5	18.3	32	CM08	2	25.0	12.0	36	TM01	-1	2.0	2.5	1	0	0		--	--	--	--	
2	29.5	18.3	32	CM08	2	25.0	12.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--	
2	29.5	18.3	31	CM07	1	15.0	10.0	9	SA01	0	10.0	9.0	1	0	0		--	--	--	--	
2	29.5	18.3	31	CM07	1	15.0	10.0	34	OT02	4	15.0	8.0	6	0	0		--	--	--	--	
2	29.5	18.3	31	CM07	1	15.0	10.0	5	OT03	2	11.0	7.0	4	0	0		--	--	--	--	
2	29.5	18.3	31	CM07	1	15.0	10.0	17	CM01	1	12.0	7.0	7	0	0		--	--	--	--	
2	29.5	18.3	31	CM07	1	15.0	10.0	37	TP01	0	10.0	7.0	1	0	0		--	--	--	--	
2	29.5	18.3	31	CM07	1	15.0	10.0	6	OT04	1	8.0	6.0	4	0	0		--	--	--	--	
2	29.5	18.3	31	CM07	1	15.0	10.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--	
2	29.5	18.3	31	CM07	1	15.0	10.0	7	SP01	0	2.4	4.0	1	0	0		--	--	--	--	
2	29.5	18.3	31	CM07	1	15.0	10.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--	
2	29.5	18.3	31	CM07	1	15.0	10.0	36	TM01	-1	2.0	2.5	1	0	0		--	--	--	--	
2	29.5	18.3	31	CM07	1	15.0	10.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--	
2	27.6	16.2	34	OT02	4	15.0	8.0	5	OT03	2	11.0	7.0	4	0	0	*	--	--	--	--	
2	27.6	16.2	34	OT02	4	15.0	8.0	17	CM01	1	12.0	7.0	7	0	0	*	--	--	--	--	
2	27.6	16.2	34	OT02	4	15.0	8.0	37	TP01	0	10.0	7.0	1	0	0	*	--	--	--	--	
2	27.6	16.2	34	OT02	4	15.0	8.0	6	OT04	1	8.0	6.0	4	0	0	*	--	--	--	--	
2	27.6	16.2	34	OT02	4	15.0	8.0	28	CC05	0	1.8	4.4	1	0	0	*	--	--	--	--	
2	27.6	16.2	34	OT02	4	15.0	8.0	7	SP01	0	2.4	4.0	1	0	0	*	--	--	--	--	
2	27.6	16.2	34	OT02	4	15.0	8.0	301	TMS	0	3.0	3.0	1	0	0	*	--	--	--	--	
2	27.6	16.2	34	OT02	4	15.0	8.0	36	TM01	-1	2.0	2.5	1	0	0	*	--	--	--	--	
2	27.6	16.2	34	OT02	4	15.0	8.0	302	TMS	0	4.0	1.5	1	0	0	*	--	--	--	--	
2	15.5	18.3	5	OT03	2	11.0	7.0	17	CM01	1	12.0	7.0	4	0	0		--	--	--	--	
2	15.5	18.3	5	OT03	2	11.0	7.0	37	TP01	0	10.0	7.0	1	0	0		--	--	--	--	
2	15.5	18.3	5	OT03	2	11.0	7.0	6	OT04	1	8.0	6.0	6	0	0		--	--	--	--	
2	15.5	18.3	5	OT03	2	11.0	7.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--	
2	15.5	18.3	5	OT03	2	11.0	7.0	7	SP01	0	2.4	4.0	1	0	0		--	--	--	--	
2	15.5	18.3	5	OT03	2	11.0	7.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--	
2	15.5	18.3	5	OT03	2	11.0	7.0	36	TM01	-1	2.0	2.5	1	0	0		--	--	--	--	
2	15.5	18.3	5	OT03	2	11.0	7.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--	
2	29.5	18.3	17	CM01	1	12.0	7.0	37	TP01	0	10.0	7.0	1	0	0		--	--	--	--	
2	29.5	18.3	17	CM01	1	12.0	7.0	6	OT04	1	8.0	6.0	4	0	0		--	--	--	--	
2	29.5	18.3	17	CM01	1	12.0	7.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--	
2	29.5	18.3	17	CM01	1	12.0	7.0	7	SP01	0	2.4	4.0	1	0	0		--	--	--	--	
2	29.5	18.3	17	CM01	1	12.0	7.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--	
2	29.5	18.3	17	CM01	1	12.0	7.0	36	TM01	-1	2.0	2.5	1	0	0		--	--	--	--	
2	29.5	18.3	17	CM01	1	12.0	7.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--	
2	15.5	18.3	6	OT04	1	8.0	6.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--	
2	15.5	18.3	6	OT04	1	8.0	6.0	7	SP01	0	2.4	4.0	1	0	0		--	--	--	--	

2	15.5	18.3	6	OT04	1	8.0	6.0	301	TMS	0	3.0	3.0	1	0	0	--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	36	TM01	-1	2.0	2.5	1	0	0	--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	302	TMS	0	4.0	1.5	1	0	0	--	--	--	--
2	29.5	18.3	30	CM06	0	25.0	12.0	--	--	--	--	--	8	0	0	2	27.1	6.3	-9.5
2	29.5	18.3	32	CM08	0	25.0	12.0	--	--	--	--	--	8	0	0	2	27.1	6.3	-9.5
2	29.5	18.3	31	CM07	0	15.0	10.0	--	--	--	--	--	8	0	0	1	26.0	8.3	0.5
2	29.5	18.3	34	OT02	0	15.0	8.0	--	--	--	--	--	8	0	0	4	26.0	10.3	0.5
2	15.5	18.3	5	OT03	0	11.0	7.0	--	--	--	--	--	8	0	0	2	25.0	11.3	4.5
2	29.5	18.3	17	CM01	0	12.0	7.0	--	--	--	--	--	8	0	0	1	25.3	11.3	3.5
2	15.5	18.3	6	OT04	0	8.0	6.0	--	--	--	--	--	8	0	0	1	23.5	12.3	7.5

PROPELLANT NEEDED THIS YEAR = 9.
PROPELLANT LEFT FROM PRIOR YEAR = 6.
PROPELLANT DELIVERED BY MINITANKER = 15.
PROPELLANT DELIVERED BY ET SCAVENGING = 0.

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MANI-FEST #	KEY REF	DESCRIPTION	MATCHED WITH	NO. FLTS	OTV USED	OTV EXP	P/L BAY LENGTH	LAUNCH MASS	TIME ON ORBIT	SP STA OPERATION
1	SA01	VLBI/COSMIC RAY PKG	SPACE SCIENCE SUBSATELLITE	1	0	0	15.1	14.3	4.0	FS
2	TP01	**PROP TRANSFER & STORAGE	TMS CAB DELIVERY	1	0	0	18.2	32.5	2.0	FS
3	CM06	CONTINUOUS FLOW ELECTRO RESUPP	RECONFIGURABLE COMM. SATELLITE	1	1	0	16.4	26.8	4.0	FS
4	CM06	CONTINUOUS FLOW ELECTRO RESUPP	TMS PROP DELIV	1	0	0	13.5	29.0	2.0	FS
5	CM06	CONTINUOUS FLOW ELECTRO RESUPP		2	0	0	12.0	25.0	2.0	
6	CM08	GLASSPROC OPTICA LFIBERS RESUPP		2	0	0	12.0	25.0	2.0	C
7	CM07	GLASS PROC PLANT		1	0	0	10.0	15.0	2.0	C
8	OT02	LOW INCL STA RESUPPLY		4	0	0	8.0	15.0	2.0	
9	OT03	SPACE STATION MODULES		2	0	0	7.0	11.0	2.0	
10	CM01	MATLS SCIENCE LAB		1	0	0	7.0	12.0	2.0	
11	OT04	HI-INCL STATION RESUPPLY		1	0	0	6.0	8.0	2.0	

** - MANIFESTED WITH MINITANKER

NO. OF SHUTTLE FLIGHTS 17
NO. OF TMS OPS 5
NO. OF MANNED TMS OPS 5

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 NO. OF SELF:PROP SAT SERV OPS       1
 TMS & SATELLITE PROPELLANT USED          1.83
NO. OF OTV REUSE FLIGHTS      1
NO. OF OTVS EXPENDED      0
SPACE STATION FLT SERVICE OPS      4
SPACE STATION CONSTR OPS      6
SPACE STATION PROP XFER OPS      1
HLLV FLIGHTS      0
 FLEET TIME ON ORBIT =      38.0 DAYS
 TOTAL FLEET TIME =     633.0 DAYS
 IDEAL MIN FLEET SIZE =      2.03 VEHICLES
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YEAR 1993

TMS MISSION SUMMARY

KEY	TITLE	CODE	TMS MISSION TYPE AUTO	MAN	RET/DEPLOY	SELF-PROP	NO. USES	PROP RQD
S001	EARTH OBSERV	SPCL						
OT03	SPACE STATION	SSSS						
OT04	HI-INCL STATION	SORS						
SP01	SPACE SCIENCE	FSXX				X	1.0	0.0
SP02	SPACE PHYSICS	SPCM						
SA01	VLBI/COSMIC	SPCL						
SL01	HUMAN LIFE SI	SSSA						
SL02	SMALL MAMMALS	SSSA						
SL03	PLANT DEVEL	SSSA						
CM01	MATLS SCIENCE	SPXX						
CM02	CRYSTAL GROWTH	PMCL		X			4.0	0.4
SA02	ASTRO TELESCOPE	SPXX						
SA03	ASTROPHYSICS	FMXM		X			1.0	0.4
SA04	ASTROPHYSICS	FMXM		X			1.0	0.4
CC05	RECONFIGURABLE	FXCM						
CM05	CONT FLOW ELEC-	PMCL		X			0.0	0.4
CM06	CONTINUOUS FLOW	PMXL		X			4.0	0.4
CM07	GLASS PROC PLANT	SPCL						
CM08	GLASSPROC OPTICA	SPCL						
OT01	LOW INCL STA	SSSS						
OT02	LOW INCL STA	SORS						
TP02	OTV MAINT TECH	SSCL						
TS02	TECH DEVEL	SSSA						

PAYLOAD 1 EARTH OBSERV PALLET
NO OTV REQD
PAYLOAD 5 SPACE STATION MODULES
NO OTV REQD
PAYLOAD 6 HI-INCL STATION RESUPPLY
NO OTV REQD
PAYLOAD 8 SPACE PHYSICS PALLET
NO OTV REQD

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PAYLOAD 18 CRYSTAL GROWTH FACTORY/PLAT
NO OTV REQD
PAYLOAD 22 ASTROPHYSICS FREE-FLYER
NO OTV REQD
PAYLOAD 28 RECONFIGURABLE COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 9.315
PAYLOAD 29 CONT FLOW ELEC- TROPH PLATFORM
NO OTV REQD
PAYLOAD 30 CONTINUOUS FLOW ELECTRO RESUPP
NO OTV REQD
PAYLOAD 32 GLASSPROC OPTICA LFIBERS RESUPP
NO OTV REQD
PAYLOAD 34 LOW INCL STA RESUPPLY
NO OTV REQD
PAYLOAD 37 PROP TRANSFER & STORAGE
NO OTV REQD
PAYLOAD 38 OTV MAINT TECH DEMOS
NO OTV REQD
SORTED H ARRAY

INDEX	#FLTS	MASS	LENGTH	INCLIN
22	1	17.00	12.00	29.00
30	5	25.00	12.00	29.00
32	2	25.00	12.00	29.00
38	1	3.60	10.90	29.00
34	4	15.00	8.00	29.00
1	1	3.50	7.00	98.00
5	1	11.00	7.00	98.00
18	1	10.00	7.00	29.00
37	-1	10.00	7.00	29.00
6	2	8.00	6.00	98.00
29	1	7.00	6.00	29.00
8	1	10.00	5.00	98.00
28	1	1.80	4.40	0.00
301	1	3.00	3.00	29.00
302	1	4.00	1.50	29.00
300	1	1.50	1.10	29.00

MANIFESTING RECORD

NP	WT AV	LEN AV	*****MAIN P/L********* #	KEY	#FL	MASS	LEN	*****SEC P/L********* #	KEY	#FL	MASS	LEN	MC	MF	SF	DM RQ	DM OK	FLTS MAN	CG	FRE LEN	FRE MASS
2	29.5	18.3	22	SA03	1	17.0	12.0	30	CM06	5	25.0	12.0	5	0	0			--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	32	CM08	2	25.0	12.0	5	0	0			--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	38	TP02	1	3.6	10.9	5	0	0			--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	34	OT02	4	15.0	8.0	5	0	0			--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	1	SO01	1	3.5	7.0	4	0	0			--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	5	OT03	1	11.0	7.0	4	0	0			--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	18	CM02	1	10.0	7.0	5	0	0			--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	37	TP01	-1	10.0	7.0	1	0	0			--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	6	OT04	2	8.0	6.0	4	0	0			--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	29	CM05	1	7.0	6.0	7	0	0			--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	8	SP02	1	10.0	5.0	4	0	0			--	--	--	--
2	29.5	18.3	22	SA03	0	17.0	12.0	28	CC05	0	1.8	4.4	8	0	0			1	26.1	1.9	10.7
2	29.5	18.3	22	SA03	0	17.0	12.0	301	TMS	1	3.0	3.0	1	0	0			--	--	--	--
2	29.5	18.3	22	SA03	0	17.0	12.0	302	TMS	1	4.0	1.5	1	0	0			--	--	--	--

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2	29.5	18.3	22	SA03	0	17.0	12.0	300	TMS	1	1.5	1.1	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	5	25.0	12.0	32	CM08	2	25.0	12.0	5	0	0		--	--	--	--
2	29.5	18.3	30	CM06	5	25.0	12.0	38	TP02	1	3.6	10.9	5	0	0		--	--	--	--
2	29.5	18.3	30	CM06	5	25.0	12.0	34	OT02	4	15.0	8.0	5	0	0		--	--	--	--
2	29.5	18.3	30	CM06	5	25.0	12.0	1	SO01	1	3.5	7.0	4	0	0		--	--	--	--
2	29.5	18.3	30	CM06	5	25.0	12.0	5	OT03	1	11.0	7.0	4	0	0		--	--	--	--
2	29.5	18.3	30	CM06	5	25.0	12.0	18	CM02	1	10.0	7.0	5	0	0		--	--	--	--
2	29.5	18.3	30	CM06	5	25.0	12.0	37	TP01	-1	10.0	7.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	5	25.0	12.0	6	OT04	2	8.0	6.0	4	0	0		--	--	--	--
2	29.5	18.3	30	CM06	5	25.0	12.0	29	CM05	1	7.0	6.0	6	0	0		--	--	--	--
2	29.5	18.3	30	CM06	5	25.0	12.0	8	SP02	1	10.0	5.0	4	0	0		--	--	--	--
2	29.5	18.3	30	CM06	5	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	4	25.0	12.0	301	TMS	0	3.0	3.0	8	0	0		1	26.1	3.3	1.5
2	29.5	18.3	30	CM06	3	25.0	12.0	302	TMS	0	4.0	1.5	8	0	0		1	26.1	4.8	0.5
2	29.5	18.3	30	CM06	2	25.0	12.0	300	TMS	0	1.5	1.1	8	0	0		1	26.5	5.2	3.0
2	29.5	18.3	32	CM08	2	25.0	12.0	38	TP02	1	3.6	10.9	5	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	34	OT02	4	15.0	8.0	5	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	1	SO01	1	3.5	7.0	4	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	5	OT03	1	11.0	7.0	4	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	18	CM02	1	10.0	7.0	5	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	37	TP01	-1	10.0	7.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	6	OT04	2	8.0	6.0	4	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	29	CM05	1	7.0	6.0	6	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	8	SP02	1	10.0	5.0	4	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	300	TMS	0	1.5	1.1	1	0	0		--	--	--	--
2	29.5	18.3	38	TP02	1	3.6	10.9	34	OT02	4	15.0	8.0	5	0	0		--	--	--	--
2	29.5	18.3	38	TP02	1	3.6	10.9	1	SO01	1	3.5	7.0	4	0	0		--	--	--	--
2	29.5	18.3	38	TP02	1	3.6	10.9	5	OT03	1	11.0	7.0	4	0	0		--	--	--	--
2	29.5	18.3	38	TP02	0	3.6	10.9	18	CM02	0	10.0	7.0	8	0	0		1	26.9	0.4	15.9
2	29.5	18.3	38	TP02	0	3.6	10.9	37	TP01	-1	10.0	7.0	1	0	0		--	--	--	--
2	29.5	18.3	38	TP02	0	3.6	10.9	6	OT04	2	8.0	6.0	1	0	0		--	--	--	--
2	29.5	18.3	38	TP02	0	3.6	10.9	29	CM05	1	7.0	6.0	1	0	0		--	--	--	--
2	29.5	18.3	38	TP02	0	3.6	10.9	8	SP02	1	10.0	5.0	1	0	0		--	--	--	--
2	29.5	18.3	38	TP02	0	3.6	10.9	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	29.5	18.3	38	TP02	0	3.6	10.9	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	29.5	18.3	38	TP02	0	3.6	10.9	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	29.5	18.3	38	TP02	0	3.6	10.9	300	TMS	0	1.5	1.1	1	0	0		--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	1	SO01	1	3.5	7.0	4	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	5	OT03	1	11.0	7.0	4	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	18	CM02	0	10.0	7.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	37	TP01	-1	10.0	7.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	6	OT04	2	8.0	6.0	4	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	3	15.0	8.0	29	CM05	0	7.0	6.0	8	0	0	*	1	25.8	2.2	5.6
2	27.6	16.2	34	OT02	3	15.0	8.0	8	SP02	1	10.0	5.0	4	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	3	15.0	8.0	28	CC05	0	1.8	4.4	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	3	15.0	8.0	301	TMS	0	3.0	3.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	3	15.0	8.0	302	TMS	0	4.0	1.5	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	3	15.0	8.0	300	TMS	0	1.5	1.1	1	0	0	*	--	--	--	--
2	15.5	18.3	1	SO01	0	3.5	7.0	5	OT03	0	11.0	7.0	8	0	0		1	27.6	4.3	1.0
2	15.5	18.3	1	SO01	0	3.5	7.0	18	CM02	0	10.0	7.0	1	0	0		--	--	--	--
2	15.5	18.3	1	SO01	0	3.5	7.0	37	TP01	-1	10.0	7.0	1	0	0		--	--	--	--
2	15.5	18.3	1	SO01	0	3.5	7.0	6	OT04	2	8.0	6.0	1	0	0		--	--	--	--
2	15.5	18.3	1	SO01	0	3.5	7.0	29	CM05	0	7.0	6.0	1	0	0		--	--	--	--
2	15.5	18.3	1	SO01	0	3.5	7.0	8	SP02	1	10.0	5.0	1	0	0		--	--	--	--
2	15.5	18.3	1	SO01	0	3.5	7.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	15.5	18.3	1	SO01	0	3.5	7.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	15.5	18.3	1	SO01	0	3.5	7.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--

2	15.5	18.3	1	S001	0	3.5	7.0	300	TMS	0	1.5	1.1	1	0	0	--	--	--	--	
2	15.5	18.3	6	OT04	2	8.0	6.0	29	CM05	0	7.0	6.0	1	0	0	--	--	--	--	
2	15.5	18.3	6	OT04	2	8.0	6.0	8	SP02	1	10.0	5.0	6	0	0	--	--	--	--	
2	15.5	18.3	6	OT04	2	8.0	6.0	28	CC05	0	1.8	4.4	1	0	0	--	--	--	--	
2	15.5	18.3	6	OT04	2	8.0	6.0	301	TMS	0	3.0	3.0	1	0	0	--	--	--	--	
2	15.5	18.3	6	OT04	2	8.0	6.0	302	TMS	0	4.0	1.5	1	0	0	--	--	--	--	
2	15.5	18.3	6	OT04	2	8.0	6.0	300	TMS	0	1.5	1.1	1	0	0	--	--	--	--	
2	15.5	18.3	8	SP02	1	10.0	5.0	28	CC05	0	1.8	4.4	1	0	0	--	--	--	--	
2	15.5	18.3	8	SP02	1	10.0	5.0	301	TMS	0	3.0	3.0	1	0	0	--	--	--	--	
2	15.5	18.3	8	SP02	1	10.0	5.0	302	TMS	0	4.0	1.5	1	0	0	--	--	--	--	
2	15.5	18.3	8	SP02	1	10.0	5.0	300	TMS	0	1.5	1.1	1	0	0	--	--	--	--	
2	29.5	18.3	30	CM06	0	25.0	12.0	--	--	--	--	--	8	0	0	2	27.1	6.3	-9.5	
2	29.5	18.3	32	CM08	0	25.0	12.0	--	--	--	--	--	8	0	0	2	27.1	6.3	-9.5	
2	29.5	18.3	34	OT02	0	15.0	8.0	--	--	--	--	--	8	0	0	3	26.0	10.3	0.5	
2	15.5	18.3	6	OT04	0	8.0	6.0	--	--	--	--	--	8	0	0	2	23.5	12.3	7.5	
2	15.5	18.3	8	SP02	0	10.0	5.0	--	--	--	--	--	8	0	0	1	24.6	13.3	5.5	

PROPELLANT NEEDED THIS YEAR = 9.
PROPELLANT LEFT FROM PRIOR YEAR = 12.
PROPELLANT DELIVERED BY MINITANKER = 0.
PROPELLANT DELIVERED BY ET SCAVENGING = 0.

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MANI-FEST #	KEY REF	DESCRIPTION	MATCHED WITH	NO. FLTS	OTV USED	OTV EXP	P/L BAY LENGTH	LAUNCH MASS	TIME ON ORBIT	SP STA OPERATION
1	SA03	ASTROPHYSICS FREE-FLYER	RECONFIGURABLE COMM. SATELLITE	1	1	0	16.4	18.8	4.0	FS
2	CM06	CONTINUOUS FLOW ELECTRO RESUPP	TMS CAB DELIVERY	1	0	0	15.0	28.0	2.0	FS
3	CM06	CONTINUOUS FLOW ELECTRO RESUPP	TMS PROP DELIV	1	0	0	13.5	29.0	2.0	FS
4	CM06	CONTINUOUS FLOW ELECTRO RESUPP	TMS DELIVERY	1	0	0	13.1	26.5	2.0	FS
5	TP02	OTV MAINT TECH DEMOS	CRYSTAL GROWTH FACTORY/PLAT	1	0	0	17.9	13.6	4.0	FS
6	OT02	LOW INCL STA RESUPPLY	CONT FLOW ELEC-TROPH PLATFORM	1	0	0	16.1	23.9	4.0	FS
7	SO01	EARTH OBSERV PALLET	SPACE STATION MODULES	1	0	0	14.0	14.5	4.0	FS
8	CM06	CONTINUOUS FLOW ELECTRO RESUPP		2	0	0	12.0	25.0	2.0	
9	CM08	GLASSPROC OPTICA LFIBERS RESUPP		2	0	0	12.0	25.0	2.0	C
10	OT02	LOW INCL STA RESUPPLY		3	0	0	8.0	15.0	2.0	
11	OT04	HI-INCL STATION RESUPPLY		2	0	0	6.0	8.0	2.0	
12	SP02	SPACE PHYSICS PALLET		1	0	0	5.0	10.0	2.0	C

** - MANIFESTED WITH MINITANKER

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NO. OF SHUTTLE FLIGHTS     17
 NO. OF TMS OPS      10
 NO. OF MANNED TMS OPS      10
 NO. OF SELF:PROP SAT SERV OPS       1
 TMS & SATELLITE PROPELLANT USED          3.61
NO. OF OTV REUSE FLIGHTS      1
NO. OF OTVS EXPENDED      0
SPACE STATION FLT SERVICE OPS      7
SPACE STATION CONSTR OPS      7
SPACE STATION PROP XFER OPS      0
HLLV FLIGHTS      0
 FLEET TIME ON ORBIT =      42.0 DAYS
 TOTAL FLEET TIME =     637.0 DAYS
 IDEAL MIN FLEET SIZE =      2.04 VEHICLES
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YEAR 1994

TMS MISSION SUMMARY

KEY	TITLE	CODE	TMS MISSION TYPE AUTO	MAN	RET/DEPLOY	SELF-PROP	NO. USES	PROP RQD
SO01	EARTH OBSERV	SPCL						
OT03	SPACE STATION	SSSS						
OT04	HI-INCL STATION	SORS						
SP02	SPACE PHYSICS	SPCM						
SA01	VLBI/COSMIC	SPCL						
SL01	HUMAN LIFE SI	SSSA						
SL02	SMALL MAMMALS	SSSA						
SL03	PLANT DEVEL	SSSA						
SL04	LIFESCIENCES	SPXX						
SL05	CENTRIFUGE	SSCL						
CM01	MATLS SCIENCE	SPXX						
CM02	CRYSTAL GROWTH	PMCL		X			4.0	0.4
CM03	CRYSTAL GROWTH	PMXX		X			3.0	0.4
SA02	ASTRO TELESCOPE	SPXX						
SA03	ASTROPHYSICS	FMXM		X			1.0	0.4
SA04	ASTROPHYSICS	FMXM		X			1.0	0.4
CC05	RECONFIGURABLE	FXCM						
CM05	CONT FLOW ELEC-	PMCL		X			0.0	0.4
CM06	CONTINUOUS FLOW	PMXL		X			4.0	0.4
CM07	GLASS PROC PLANT	SPCL						
CM08	GLASSPROC OPTICA	SPCL						
OT01	LOW INCL STA	SSSS						
OT02	LOW INCL STA	SORS						
TS01	SATELLITE ASSY	SSCL						
TS02	TECH DEVEL	SSSA						

PAYLOAD 6 HI-INCL STATION RESUPPLY
NO OTV REQD
PAYLOAD 7 SPACE SCIENCE SUBSATELLITE
NO OTV REQD

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PAYLOAD 14 LIFESCIENCES RES FAC
NO OTV REQD
PAYLOAD 15 CENTRIFUGE (ADD TO LSRF)
NO OTV REQD
PAYLOAD 19 CRYSTAL GROWTH RESUP-1
NO OTV REQD
PAYLOAD 28 RECONFIGURABLE COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 9.315
PAYLOAD 30 CONTINUOUS FLOW ELECTRO RESUPP
NO OTV REQD
PAYLOAD 32 GLASSPROC OPTICA LFIBERS RESUPP
NO OTV REQD
PAYLOAD 34 LOW INCL STA RESUPPLY
NO OTV REQD
PAYLOAD 38 OTV MAINT TECH DEMOS
NO OTV REQD
PAYLOAD 39 SATELLITE ASSY & SERVICE
NO OTV REQD
SORTED H ARRAY

INDEX	#FLTS	MASS	LENGTH	INCLIN
30	7	25.00	12.00	29.00
32	2	25.00	12.00	29.00
38	-1	3.60	10.90	29.00
34	4	15.00	8.00	29.00
39	1	2.60	7.90	29.00
14	1	5.56	7.00	29.00
6	2	8.00	6.00	98.00
28	1	1.80	4.40	0.00
7	-1	2.40	4.00	98.00
301	1	3.00	3.00	29.00
15	1	0.50	3.00	29.00
19	3	4.00	2.00	29.00
302	2	4.00	1.50	29.00

MANIFESTING RECORD

NP	WT AV	LEN AV	*****MAIN P/L******** #	KEY	#FL	MASS	LEN	*****SEC P/L******** #	KEY	#FL	MASS	LEN	MC	MF	SF	DM RQ	DM OK	FLTS MAN	CG	FRE LEN	FRE MASS
1	27.6	10.1	30	CM06	7	25.0	12.0	32	CM08	2	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	7	25.0	12.0	38	TP02	-1	3.6	10.9	1	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	7	25.0	12.0	34	OT02	4	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	7	25.0	12.0	39	TS01	1	2.6	7.9	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	7	25.0	12.0	14	SL04	1	5.6	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	7	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	7	25.0	12.0	28	CC05	1	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	7	25.0	12.0	7	SP01	-1	2.4	4.0	1	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	7	25.0	12.0	301	TMS	1	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	7	25.0	12.0	15	SL05	1	0.5	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	7	25.0	12.0	19	CM03	3	4.0	2.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	7	25.0	12.0	302	TMS	2	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	38	TP02	-1	3.6	10.9	1	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	34	OT02	4	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	39	TS01	1	2.6	7.9	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	14	SL04	1	5.6	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--

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1	27.6	10.1	32	CM08	2	25.0	12.0	28	CC05	1	1.8	4.4	5	1	1	*	--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	7	SP01	-1	2.4	4.0	1	1	1	*	--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	301	TMS	1	3.0	3.0	5	1	1	*	--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	15	SL05	1	0.5	3.0	5	1	1	*	--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	19	CM03	3	4.0	2.0	5	1	1	*	--	--	--	--
1	27.6	10.1	32	CM08	2	25.0	12.0	302	TMS	2	4.0	1.5	5	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	39	TS01	1	2.6	7.9	5	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	14	SL04	1	5.6	7.0	5	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	28	CC05	1	1.8	4.4	5	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	7	SP01	-1	2.4	4.0	1	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	301	TMS	1	3.0	3.0	5	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	15	SL05	1	0.5	3.0	5	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	19	CM03	3	4.0	2.0	7	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	4	15.0	8.0	302	TMS	2	4.0	1.5	7	1	1	*	--	--	--	--
1	27.6	10.1	39	TS01	1	2.6	7.9	14	SL04	1	5.6	7.0	5	1	1	*	--	--	--	-
1	27.6	10.1	39	TS01	1	2.6	7.9	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--
1	27.6	10.1	39	TS01	1	2.6	7.9	28	CC05	1	1.8	4.4	5	1	1	*	--	--	--	--
1	27.6	10.1	39	TS01	1	2.6	7.9	7	SP01	-1	2.4	4.0	1	1	1	*	--	--	--	--
1	27.6	10.1	39	TS01	1	2.6	7.9	301	TMS	1	3.0	3.0	5	1	1	*	--	--	--	--
1	27.6	10.1	39	TS01	1	2.6	7.9	15	SL05	1	0.5	3.0	5	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											15.200										
1	27.6	10.1	39	TS01	0	2.6	7.9	19	CM03	2	4.0	2.0	8	1	1	*	1	27.7	0.2	3.2
2	29.5	18.3	30	CM06	7	25.0	12.0	32	CM08	2	25.0	12.0	5	0	0		--	--	--	--
2	29.5	18.3	30	CM06	7	25.0	12.0	38	TP02	-1	3.6	10.9	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	7	25.0	12.0	34	OT02	4	15.0	8.0	5	0	0		--	--	--	--
2	29.5	18.3	30	CM06	7	25.0	12.0	39	TS01	0	2.6	7.9	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	7	25.0	12.0	14	SL04	1	5.6	7.0	5	0	0		--	--	--	--
2	29.5	18.3	30	CM06	7	25.0	12.0	6	OT04	2	8.0	6.0	4	0	0		--	--	--	--
2	29.5	18.3	30	CM06	6	25.0	12.0	28	CC05	0	1.8	4.4	8	0	0		1	26.3	1.9	2.7
2	29.5	18.3	30	CM06	6	25.0	12.0	7	SP01	-1	2.4	4.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	5	25.0	12.0	301	TMS	0	3.0	3.0	8	0	0		1	26.1	3.3	1.5
DOCKING MODULE ADDED																					
2	29.5	18.3	30	CM06	4	25.0	12.0	15	SL05	0	0.5	3.0	8	0	0	*	1	26.7	1.2	2.1
2	29.5	18.3	30	CM06	2	25.0	12.0	19	CM03	0	4.0	2.0	8	0	0		2	25.9	4.3	0.5
2	29.5	18.3	30	CM06	0	25.0	12.0	302	TMS	0	4.0	1.5	8	0	0		2	26.1	4.8	0.5
2	29.5	18.3	32	CM08	2	25.0	12.0	38	TP02	-1	3.6	10.9	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	34	OT02	4	15.0	8.0	5	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	39	TS01	0	2.6	7.9	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	14	SL04	1	5.6	7.0	5	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	6	OT04	2	8.0	6.0	4	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	7	SP01	-1	2.4	4.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	15	SL05	0	0.5	3.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	19	CM03	0	4.0	2.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	2	25.0	12.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	39	TS01	0	2.6	7.9	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	3	15.0	8.0	14	SL04	0	5.6	7.0	8	0	0	*	1	25.9	1.2	7.1
2	27.6	16.2	34	OT02	3	15.0	8.0	6	OT04	2	8.0	6.0	4	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	3	15.0	8.0	28	CC05	0	1.8	4.4	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	3	15.0	8.0	7	SP01	-1	2.4	4.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	3	15.0	8.0	301	TMS	0	3.0	3.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	3	15.0	8.0	15	SL05	0	0.5	3.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	3	15.0	8.0	19	CM03	0	4.0	2.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	3	15.0	8.0	302	TMS	0	4.0	1.5	1	0	0	*	--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	7	SP01	-1	2.4	4.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--

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2	15.5	18.3	6	OT04	2	8.0	6.0	15	SL05	0	0.5	3.0	1	0	0	--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	19	CM03	0	4.0	2.0	1	0	0	--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	302	TMS	0	4.0	1.5	1	0	0	--	--	--	--
2	29.5	18.3	32	CM08	0	25.0	12.0	--	--	--	--	--	8	0	0	2	27.1	6.3	-9.5
2	29.5	18.3	34	OT02	0	15.0	8.0	--	--	--	--	--	8	0	0	3	26.0	10.3	0.5
2	15.5	18.3	6	OT04	0	8.0	6.0	--	--	--	--	--	8	0	0	2	23.5	12.3	7.5

PROPELLANT NEEDED THIS YEAR = 9.
PROPELLANT LEFT FROM PRIOR YEAR = 2.
PROPELLANT DELIVERED BY MINITANKER = 15.
PROPELLANT DELIVERED BY ET SCAVENGING = 0.

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MANI-FEST #	KEY REF	DESCRIPTION	MATCHED WITH	NO. FLTS	OTV USED	OTV EXP	P/L BAY LENGTH	LAUNCH MASS	TIME ON ORBIT	SP STA OPERATION
1	TS01	**SATELLITE ASSY & SERVICE	CRYSTAL GROWTH RESUP-1	1	0	0	18.1	26.3	4.0	FS
2	CM06	CONTINUOUS FLOW ELECTRO RESUPP	RECONFIGURABLE COMM. SATELLITE	1	1	0	16.4	26.8	4.0	FS
3	CM06	CONTINUOUS FLOW ELECTRO RESUPP	TMS CAB DELIVERY	1	0	0	15.0	28.0	2.0	FS
4	CM06	CONTINUOUS FLOW ELECTRO RESUPP	CENTRIFUGE (ADD TO LSRF)	1	0	0	17.1	27.4	4.0	FS
5	CM06	CONTINUOUS FLOW ELECTRO RESUPP	CRYSTAL GROWTH RESUP-1	2	0	0	14.0	29.0	4.0	FS
6	CM06	CONTINUOUS FLOW ELECTRO RESUPP	TMS PROP DELIV	2	0	0	13.5	29.0	2.0	FS
7	OT02	LOW INCL STA RESUPPLY	LIFESCIENCES RES FAC	1	0	0	17.1	22.4	4.0	FS
8	CM08	GLASSPROC OPTICA LFIBERS RESUPP		2	0	0	12.0	25.0	2.0	C
9	OT02	LOW INCL STA RESUPPLY		3	0	0	8.0	15.0	2.0	C
10	OT04	HI-INCL STATION RESUPPLY		2	0	0	6.0	8.0	2.0	

** - MANIFESTED WITH MINITANKER

NO. OF SHUTTLE FLIGHTS 16
NO. OF TMS OPS 13
NO. OF MANNED TMS OPS 13
NO. OF SELF:PROP SAT SERV OPS 0
TMS & SATELLITE PROPELLANT USED 4.63
NO. OF OTV REUSE FLIGHTS 1
NO. OF OTVS EXPENDED 0

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SPACE STATION FLT SERVICE OPS      9
SPACE STATION CONSTR OPS      5
SPACE STATION PROP XFER OPS      1
HLLV FLIGHTS      0
 FLEET TIME ON ORBIT =      44.0 DAYS
 TOTAL FLEET TIME =     604.0 DAYS
 IDEAL MIN FLEET SIZE =      1.94 VEHICLES
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YEAR 1995

TMS MISSION SUMMARY

KEY	TITLE	CODE	TMS MISSION TYPE AUTO	MAN	RET/DEPLOY	SELF-PROP	NO. USES	PROP RQD
S001	EARTH OBSERV	SPCL						
S002	SYNTH APERTURE	SPCL						
OT03	SPACE STATION	SSSS						
OT04	HI-INCL STATION	SORS						
SP02	SPACE PHYSICS	SPCM						
SA01	VLBI/COSMIC	SPCL						
SL01	HUMAN LIFE SI	SSSA						
SL03	PLANT DEVEL	SSSA						
SL04	LIFESCIENCES	SPXX						
SL05	CENTRIFUGE	SSCL						
CM01	MATLS SCIENCE	SPXX						
CM02	CRYSTAL GROWTH	PMCL		X			4.0	0.4
CM03	CRYSTAL GROWTH	PMXX		X			3.0	0.4
SA02	ASTRO TELESCOPE	SPXX						
SA03	ASTROPHYSICS	FMXM		X			1.0	0.4
SA04	ASTROPHYSICS	FMXM		X			1.0	0.4
CC03	INTELSAT-7,7A	FXCL						
CC04	MULTIBEAM COMM.	SSCM						
CC05	RECONFIGURABLE	FXCM						
CM05	CONT FLOW ELEC-	PMCL		X			0.0	0.4
CM06	CONTINUOUS FLOW	PMXL		X			4.0	0.4
CM07	GLASS PROC PLANT	SPCL						
CM08	GLASSPROC OPTICA	SPCL						
OT01	LOW INCL STA	SSSS						
OT02	LOW INCL STA	SORS						
OT05	HI-ALT STA	OMSB						
TE01	LARGE POWER SYS	SSCL						

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TS02 TECH DEVEL SSSA

THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
NOT MANIFESTED ON TRANSPORTATION

OT05 SPACE-BASED MANNED OTV
NOT MANIFESTED AS SHUTTLE PAYLOAD
PAYLOAD 2 SYNTH APERTURE RADAR
NO OTV REQD
PAYLOAD 6 HI-INCL STATION RESUPPLY
NO OTV REQD
PAYLOAD 12 SMALL MAMMALS CARRY-ONS

THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
NOT MANIFESTED ON TRANSPORTATION
PAYLOAD 18 CRYSTAL GROWTH FACTORY/PLAT
NO OTV REQD
PAYLOAD 19 CRYSTAL GROWTH RESUP-1
NO OTV REQD
PAYLOAD 26 INTELSAT-7,7A CLASS COMSAT
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 14.170
PAYLOAD 27 MULTIBEAM COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 14.170
PAYLOAD 28 RECONFIGURABLE COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 9.315
PAYLOAD 30 CONTINUOUS FLOW ELECTRO RESUPP
NO OTV REQD
PAYLOAD 32 GLASSPROC OPTICA LFIBERS RESUPP
NO OTV REQD
PAYLOAD 33 LOW INCL STA MODULE DEL
NO OTV REQD
PAYLOAD 34 LOW INCL STA RESUPPLY
NO OTV REQD
PAYLOAD 35 HI-ALT STA RESUPPLY
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 21.497
PAYLOAD 39 SATELLITE ASSY & SERVICE
NO OTV REQD
PAYLOAD 40 LARGE POWER SYS TECHNOLOGY
NO OTV REQD
SORTED H ARRAY

INDEX	#FLTS	MASS	LENGTH	INCLIN
33	1	22.00	14.00	29.00
30	9	25.00	12.00	29.00
32	3	25.00	12.00	29.00
27	1	5.00	8.00	0.00
34	4	15.00	8.00	29.00
39	-1	2.60	7.90	29.00
18	1	10.00	7.00	29.00
2	1	2.50	6.00	98.00
6	2	8.00	6.00	98.00
26	1	5.00	6.00	0.00
28	2	1.80	4.40	0.00
301	2	3.00	3.00	29.00
19	3	4.00	2.00	29.00
40	1	1.20	2.00	29.00
302	2	4.00	1.50	29.00

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300 1 1.50 1.10 29.00

MANIFESTING RECORD

NP	WT AV	LEN AV	*****MAIN P/L******** #	KEY	#FL	MASS	LEN	***** SEC P/L******** #	KEY	#FL	MASS	LEN	MC	MF	SF	DM RQ	FLTS OK	FLTS MAN	CG	FRE LEN	FRE MASS
1	27.6	10.1	33	OT01	1	22.0	14.0	30	CM06	9	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	1	22.0	14.0	32	CM08	3	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	1	22.0	14.0	27	CC04	1	5.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	1	22.0	14.0	34	OT02	4	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	1	22.0	14.0	39	TS01	-1	2.6	7.9	1	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	1	22.0	14.0	18	CM02	1	10.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	1	22.0	14.0	2	SO02	1	2.5	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	1	22.0	14.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	1	22.0	14.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	1	22.0	14.0	28	CC05	2	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	1	22.0	14.0	301	TMS	2	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	1	22.0	14.0	19	CM03	3	4.0	2.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	1	22.0	14.0	40	TE01	1	1.2	2.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	1	22.0	14.0	302	TMS	2	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	1	22.0	14.0	300	TMS	1	1.5	1.1	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	9	25.0	12.0	32	CM08	3	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	9	25.0	12.0	27	CC04	1	5.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	9	25.0	12.0	34	OT02	4	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	9	25.0	12.0	39	TS01	-1	2.6	7.9	1	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	9	25.0	12.0	18	CM02	1	10.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	9	25.0	12.0	2	SO02	1	2.5	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	9	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	9	25.0	12.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	9	25.0	12.0	28	CC05	2	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	9	25.0	12.0	301	TMS	2	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	9	25.0	12.0	19	CM03	3	4.0	2.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	9	25.0	12.0	40	TE01	1	1.2	2.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	9	25.0	12.0	302	TMS	2	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	9	25.0	12.0	300	TMS	1	1.5	1.1	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	27	CC04	1	5.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	34	OT02	4	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	39	TS01	-1	2.6	7.9	1	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	18	CM02	1	10.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	2	SO02	1	2.5	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	28	CC05	2	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	301	TMS	2	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	19	CM03	3	4.0	2.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	40	TE01	1	1.2	2.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	302	TMS	2	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	300	TMS	1	1.5	1.1	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	34	OT02	4	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	39	TS01	-1	2.6	7.9	1	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	18	CM02	1	10.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	2	SO02	1	2.5	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	28	CC05	2	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	301	TMS	2	3.0	3.0	5	1	1	*		--	--	--	--

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PROPELLANT DELIVERED USING MINITANKER IS NOW      15.200
 1 27.6 10.1   27 CC04   0    5.0   8.0   19 CM03   2    4.0   2.0   8   1   1   *       1   27.1    0.1    0.8
 1 27.6 10.1   27 CC04   0    5.0   8.0   40 TE01   1    1.2   2.0   1   1   1   *      --   --     --     --
 1 27.6 10.1   27 CC04   0    5.0   8.0  302 TMS    2    4.0   1.5   1   1   1   *      --   --     --     --
 1 27.6 10.1   27 CC04   0    5.0   8.0  300 TMS    1    1.5   1.1   1   1   1   *      --   --     --     --
 1 27.6 10.1   34 OT02   4   15.0   8.0   39 TS01  -1    2.6   7.9   1   1   1   *      --   --     --     --
 1 27.6 10.1   34 OT02   4   15.0   8.0   18 CM02   1   10.0   7.0   5   1   1   *      --   --     --     --
 1 27.6 10.1   34 OT02   4   15.0   8.0    2 SO02   1    2.5   6.0   4   1   1   *      --   --     --     --
 1 27.6 10.1   34 OT02   4   15.0   8.0    6 OT04   2    8.0   6.0   4   1   1   *      --   --     --     --
 1 27.6 10.1   34 OT02   4   15.0   8.0   26 CC03   1    5.0   6.0   5   1   1   *      --   --     --     --
 1 27.6 10.1   34 OT02   4   15.0   8.0   28 CC05   2    1.8   4.4   5   1   1   *      --   --     --     --
 1 27.6 10.1   34 OT02   4   15.0   8.0  301 TMS    2    3.0   3.0   5   1   1   *      --   --     --     --
 1 27.6 10.1   34 OT02   4   15.0   8.0   19 CM03   2    4.0   2.0   7   1   1   *      --   --     --     --
 1 27.6 10.1   34 OT02   4   15.0   8.0   40 TE01   1    1.2   2.0   7   1   1   *      --   --     --     --
 1 27.6 10.1   34 OT02   4   15.0   8.0  302 TMS    2    4.0   1.5   7   1   1   *      --   --     --     --
 1 27.6 10.1   34 OT02   4   15.0   8.0  300 TMS    1    1.5   1.1   7   1   1   *      --   --     --     --
 1 27.6 10.1   18 CM02   1   10.0   7.0    2 SO02   1    2.5   6.0   4   1   1   *      --   --     --     --
 1 27.6 10.1   18 CM02   1   10.0   7.0    6 OT04   2    8.0   6.0   4   1   1   *      --   --     --     --
 1 27.6 19.1   18 CM02   1   10.0   7.0   26 CC03   1    5.0   6.0   5   1   1   *      --   --     --     --
 1 27.6 10.1   18 CM02   1   10.0   7.0   28 CC05   2    1.8   4.4   5   1   1   *      --   --     --     --
PROPELLANT DELIVERED USING MINITANKER IS NOW      30.239
 1 27.6 10.1   18 CM02   0   10.0   7.0  301 TMS    1    3.0   3.0   8   1   1   *       1   26.2    0.1   -3.0
 1 27.6 10.1   18 CM02   0   10.0   7.0   19 CM03   2    4.0   2.0   1   1   1   *      --   --     --     --
 1 27.6 10.1   18 CM02   0   10.0   7.0   40 TE01   1    1.2   2.0   1   1   1   *      --   --     --     --
 1 27.6 10.1   18 CM02   0   10.0   7.0  302 TMS    2    4.0   1.5   1   1   1   *      --   --     --     --
 1 27.6 10.1   18 CM02   0   10.0   7.0  300 TMS    1    1.5   1.1   1   1   1   *      --   --     --     --

 DOCKING MODULE ADDED
 1 15.5 18.3    2 SO02   0    2.5   6.0    6 OT04   1    8.0   6.0   8   0   0       *   1   28.4    4.2    3.1
 1 15.5 18.3    2 SO02   0    2.5   6.0   26 CC03   1    5.0   6.0   1   0   0           --   --     --     --
 1 15.5 18.3    2 SO02   0    2.5   6.0   28 CC05   2    1.8   4.4   1   0   0           --   --     --     --
 1 15.5 18.3    2 SO02   0    2.5   6.0  301 TMS    1    3.0   3.0   1   0   0           --   --     --     --
 1 15.5 18.3    2 SO02   0    2.5   6.0   19 CM03   2    4.0   2.0   1   0   0           --   --     --     --
 1 15.5 18.3    2 SO02   0    2.5   6.0   40 TE01   1    1.2   2.0   1   0   0           --   --     --     --
 1 15.5 18.3    2 SO02   0    2.5   6.0  302 TMS    2    4.0   1.5   1   0   0           --   --     --     --
 1 15.5 18.3    2 SO02   0    2.5   6.0  300 TMS    1    1.5   1.1   1   0   0           --   --     --     --
 1 15.5 18.3    6 OT04   1    8.0   6.0   26 CC03   1    5.0   6.0   4   0   0           --   --     --     --
 1 15.5 18.3    6 OT04   1    8.0   6.0   28 CC05   2    1.8   4.4   4   0   0           --   --     --     --
 1 15.5 18.3    6 OT04   1    8.0   6.0  301 TMS    1    3.0   3.0   4   0   0           --   --     --     --
 1 15.5 18.3    6 OT04   1    8.0   6.0   19 CM03   2    4.0   2.0   4   0   0           --   --     --     --
 1 15.5 18.3    6 OT04   1    8.0   6.0   40 TE01   1    1.2   2.0   4   0   0           --   --     --     --
 1 15.5 18.3    6 OT04   1    8.0   6.0  302 TMS    2    4.0   1.5   4   0   0           --   --     --     --
 1 15.5 18.3    6 OT04   1    8.0   6.0  300 TMS    1    1.5   1.1   4   0   0           --   --     --     --
 1 27.6 10.1   26 CC03   1    5.0   6.0   28 CC05   2    1.8   4.4   5   1   1   *       --   --     --     --
PROPELLANT DELIVERED USING MINITANKER IS NOW      45.438
 1 27.6 10.1   26 CC03   0    5.0   6.0  301 TMS    0    3.0   3.0   8   1   1   *       1   27.1    1.1    1.8
 1 27.6 10.1   26 CC03   0    5.0   6.0   19 CM03   2    4.0   2.0   1   1   1   *      --   --     --     --
 1 27.6 10.1   26 CC03   0    5.0   6.0   40 TE01   1    1.2   2.0   1   1   1   *      --   --     --     --
 1 27.6 10.1   26 CC03   0    5.0   6.0  302 TMS    2    4.0   1.5   1   1   1   *      --   --     --     --
 1 27.6 10.1   26 CC03   0    5.0   6.0  300 TMS    1    1.5   1.1   1   1   1   *      --   --     --     --
 1 27.6 10.1   28 CC05   2    1.8   4.4  301 TMS    0    3.0   3.0   1   1   1   *      --   --     --     --
PROPELLANT DELIVERED USING MINITANKER IS NOW      75.839
 1 27.6 10.1   28 CC05   0    1.8   4.4   19 CM03   0    4.0   2.0   8   1   1   *       2   28.1    3.7    4.0
 1 27.6 10.1   28 CC05   0    1.8   4.4   40 TE01   1    1.2   2.0   1   1   1   *      --   --     --     --
 1 27.6 10.1   28 CC05   0    1.8   4.4  302 TMS    2    4.0   1.5   1   1   1   *      --   --     --     --
 1 27.6 10.1   28 CC05   0    1.8   4.4  300 TMS    1    1.5   1.1   1   1   1   *      --   --     --     --
PROPELLANT DELIVERED USING MINITANKER IS NOW      89.953
 1 27.6 10.1   40 TE01   0    1.2   2.0  302 TMS    1    4.0   1.5   8   1   1   *       1   28.2    6.6    5.8
 2 27.6 16.2   33 OT01   1   22.0  14.0   30 CM06   9   25.0  12.0   5   0   0   *      --   --     --     --
 2 27.6 16.2   33 OT01   1   22.0  14.0   32 CM08   3   25.0  12.0   5   0   0   *      --   --     --     --
```

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2	27.6	16.2	33	OT01	1	22.0	14.0	27	CC04	0	5.0	8.0	1	0	0	*	--	--	--	--
2	27.6	16.2	33	OT01	1	22.0	14.0	34	OT02	4	15.0	8.0	5	0	0	*	--	--	--	--
2	27.6	16.2	33	OT01	1	22.0	14.0	39	TS01	-1	2.6	7.9	1	0	0	*	--	--	--	--
2	27.6	16.2	33	OT01	1	22.0	14.0	18	CM02	0	10.0	7.0	1	0	0	*	--	--	--	--
2	27.6	16.2	33	OT01	1	22.0	14.0	2	SO02	0	2.5	6.0	1	0	0	*	--	--	--	--
2	27.6	16.2	33	OT01	1	22.0	14.0	6	OT04	1	8.0	6.0	4	0	0	*	--	--	--	--
2	27.6	16.2	33	OT01	1	22.0	14.0	26	CC03	0	5.0	6.0	1	0	0	*	--	--	--	--
2	27.6	16.2	33	OT01	1	22.0	14.0	28	CC05	0	1.8	4.4	1	0	0	*	--	--	--	--
2	27.6	16.2	33	OT01	1	22.0	14.0	301	TMS	0	3.0	3.0	1	0	0	*	--	--	--	--
2	27.6	16.2	33	OT01	1	22.0	14.0	19	CM03	0	4.0	2.0	1	0	0	*	--	--	--	--
2	27.6	16.2	33	OT01	1	22.0	14.0	40	TE01	0	1.2	2.0	1	0	0	*	--	--	--	--
2	27.6	16.2	33	OT01	1	22.0	14.0	302	TMS	1	4.0	1.5	7	0	0	*	--	--	--	--
2	27.6	16.2	33	OT01	1	22.0	14.0	300	TMS	1	1.5	1.1	7	0	0	*	--	--	--	--
2	29.5	18.3	30	CM06	9	25.0	12.0	32	CM08	3	25.0	12.0	5	0	0		--	--	--	--
2	29.5	18.3	30	CM06	9	25.0	12.0	27	CC04	0	5.0	8.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	9	25.0	12.0	34	OT02	4	15.0	8.0	5	0	0		--	--	--	--
2	29.5	18.3	30	CM06	9	25.0	12.0	39	TS01	-1	2.6	7.9	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	9	25.0	12.0	18	CM02	0	10.0	7.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	9	25.0	12.0	2	SO02	0	2.5	6.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	9	25.0	12.0	6	OT04	1	8.0	6.0	4	0	0		--	--	--	--
2	29.5	18.3	30	CM06	9	25.0	12.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	9	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	9	25.0	12.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	9	25.0	12.0	19	CM03	0	4.0	2.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	9	25.0	12.0	40	TE01	0	1.2	2.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	8	25.0	12.0	302	TMS	0	4.0	1.5	8	0	0		1	26.1	4.8	0.5
2	29.5	18.3	30	CM06	7	25.0	12.0	300	TMS	0	1.5	1.1	8	0	0		1	26.5	5.2	3.0
2	29.5	18.3	32	CM08	3	25.0	12.0	27	CC04	0	5.0	8.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	3	25.0	12.0	34	OT02	4	15.0	8.0	5	0	0		--	--	--	--
2	29.5	18.3	32	CM08	3	25.0	12.0	39	TS01	-1	2.6	7.9	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	3	25.0	12.0	18	CM02	0	10.0	7.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	3	25.0	12.0	2	SO02	0	2.5	6.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	3	25.0	12.0	6	OT04	1	8.0	6.0	4	0	0		--	--	--	--
2	29.5	18.3	32	CM08	3	25.0	12.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	3	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	3	25.0	12.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	3	25.0	12.0	19	CM03	0	4.0	2.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	3	25.0	12.0	40	TE01	0	1.2	2.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	3	25.0	12.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	3	25.0	12.0	300	TMS	0	1.5	1.1	1	0	0		--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	39	TS01	-1	2.6	7.9	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	18	CM02	0	10.0	7.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	2	SO02	0	2.5	6.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	6	OT04	1	8.0	6.0	4	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	26	CC03	0	5.0	6.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	28	CC05	0	1.8	4.4	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	301	TMS	0	3.0	3.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	19	CM03	0	4.0	2.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	40	TE01	0	1.2	2.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	302	TMS	0	4.0	1.5	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	4	15.0	8.0	300	TMS	0	1.5	1.1	1	0	0	*	--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	19	CM03	0	4.0	2.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	40	TE01	0	1.2	2.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	300	TMS	0	1.5	1.1	1	0	0		--	--	--	--
2	29.5	18.3	33	OT01	0	22.0	14.0	--	--	--	--	--	8	0	0		1	26.9	4.3	-6.5
2	29.5	18.3	30	CM06	0	25.0	12.0	--	--	--	--	--	8	0	0		7	27.1	6.3	-9.5

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2	29.5	18.3	32	CM08	0	25.0	12.0	--	--	--	--	--	8	0	0	3	27.1	6.3	-9.5
2	29.5	18.3	34	OT02	0	15.0	8.0	--	--	--	--	--	8	0	0	4	26.0	10.3	0.5
2	15.5	18.3	6	OT04	0	8.0	6.0	--	--	--	--	--	8	0	0	1	23.5	12.3	7.5

PROPELLANT NEEDED THIS YEAR = 90.
PROPELLANT LEFT FROM PRIOR YEAR = 8.
PROPELLANT DELIVERED BY MINITANKER = 90.
PROPELLANT DELIVERED BY ET SCAVENGING = 0.

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MANI-FEST #	KEY REF	DESCRIPTION	MATCHED WITH	NO. FLTS	OTV USED	OTV EXP	P/L BAY LENGTH	LAUNCH MASS	TIME ON ORBIT	SP STA OPERATION
1	CC04	**MULTIBEAM COMM SATELLITE	CRYSTAL GROWTH RESUP-1	1	1	0	18.2	28.7	4.0	FS
2	CM02	**CRYSTAL GROWTH FACTORY/PLAT	TMS CAB DELIVERY	1	0	0	18.2	32.5	2.0	FS
3	SO02	SYNTH APERTURE RADAR	HI-INCL STATION RESUPPLY	1	0	0	14.1	12.4	4.0	FS
4	CC03	**INTELSAT-7,7A CLASS COMSAT	TMS CAB DELIVERY	1	1	0	17.2	27.7	2.0	FS
5	CC05	**RECONFIGURABLE COMM. SATELLI	CRYSTAL GROWTH RESUP-1	2	1	0	14.6	25.5	4.0	FS
6	TE01	**LARGE POWER SY TECHNOLOGY	TMS PROP DELIV	1	0	0	11.7	23.7	2.0	FS
7	CM06	CONTINUOUS FLOW ELECTRO RESUPP	TMS PROP DELIV	1	0	0	13.5	29.0	2.0	FS
8	CM06	CONTINUOUS FLOW ELECTRO RESUPP	TMS DELIVERY	1	0	0	13.1	26.5	2.0	FS
9	OT01	LOW INCL STA MODULE DEL		1	0	0	14.0	22.0	2.0	C
10	CM06	CONTINUOUS FLOW ELECTRO RESUPP		7	0	0	12.0	25.0	2.0	
11	CM08	GLASSPROC OPTICA LFIBERS RESUPP		3	0	0	12.0	25.0	2.0	C
12	OT02	LOW INCL STA RESUPPLY		4	0	0	8.0	15.0	2.0	C
13	OT04	HI-INCL STATION RESUPPLY		1	0	0	6.0	8.0	2.0	

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** - MANIFESTED WITH MINITANKER

NO. OF SHUTTLE FLIGHTS 25
NO. OF TMS OPS 13
NO. OF MANNED TMS OPS 13
NO. OF SELF:PROP SAT SERV OPS 0
TMS & SATELLITE PROPELLANT USED 4.63
NO. OF OTV REUSE FLIGHTS 4
NO. OF OTVS EXPENDED 0
SPACE STATION FLT SERVICE OPS 9
SPACE STATION CONSTR OPS 10
SPACE STATION PROP XFER OPS 6
HLLV FLIGHTS 0
FLEET TIME ON ORBIT = 58.0 DAYS
TOTAL FLEET TIME = 933.0 DAYS
IDEAL MIN FLEET SIZE = 2.99 VEHICLES

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YEAR 1996

TMS MISSION SUMMARY

KEY	TITLE	CODE	TMS MISSION TYPE AUTO	MAN	RET/DEPLOY	SELF-PROP	NO. USES	PROP RQD
S001	EARTH OBSERV	SPCL						
S002	SYNTH APERTURE	SPCL						
OT03	SPACE STATION	SSSS						
OT04	HI-INCL STATION	SORS						
SP01	SPACE SCIENCE	FSXX				X	1.0	0.0
SP02	SPACE PHYSICS	SPCM						
SA01	VLBI/COSMIC	SPCL						
SL01	HUMAN LIFE SI	SSSA						
SL03	PLANT DEVEL	SSSA						
SL04	LIFESCIENCES	SPXX						
SL05	CENTRIFUGE	SSCL						
CM01	MATLS SCIENCE	SPXX						
CM02	CRYSTAL GROWTH	PMCL		X			4.0	0.4
CM03	CRYSTAL GROWTH	PMXX		X			3.0	0.4
SA03	ASTROPHYSICS	FMXM		X			1.0	0.4
SA04	ASTROPHYSICS	FMXM		X			1.0	0.4
CC03	INTELSAT-7,7A	FXCL						
CC04	MULTIBEAM COMM.	SSCM						
CC05	RECONFIGURABLE	FXCM						
CM05	CONT FLOW ELEC-	PMCL		X			0.0	0.4
CM06	CONTINUOUS FLOW	PMXL		X			4.0	0.4
CM07	GLASS PROC PLANT	SPCL						
CM08	GLASSPROC OPTICA	SPCL						
OT01	LOW INCL STA	SSSS						
OT02	LOW INCL STA	SORS						
OT05	HI-ALT STA	OMSB						
TS02	TECH DEVEL	SSSA						

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OT05 SPACE-BASED MANNED OTV
NOT MANIFESTED AS SHUTTLE PAYLOAD
PAYLOAD 6 HI-INCL STATION RESUPPLY
NO OTV REQD
PAYLOAD 7 SPACE SCIENCE SUBSATELLITE
NO OTV REQD
PAYLOAD 19 CRYSTAL GROWTH RESUP-1
NO OTV REQD
PAYLOAD 21 ASTRO TELESCOPE CLUSTER
NO OTV REQD
PAYLOAD 26 INTELSAT-7,7A CLASS COMSAT
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 14.170
PAYLOAD 27 MULTIBEAM COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 14.170
PAYLOAD 28 RECONFIGURABLE COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 9.315
PAYLOAD 29 CONT FLOW ELEC- TROPH PLATFORM
NO OTV REQD
PAYLOAD 30 CONTINUOUS FLOW ELECTRO RESUPP
NO OTV REQD
PAYLOAD 31 GLASS PROC PLANT
NO OTV REQD
PAYLOAD 32 GLASSPROC OPTICA LFIBERS RESUPP
NO OTV REQD
PAYLOAD 33 LOW INCL STA MODULE DEL
NO OTV REQD
PAYLOAD 34 LOW INCL STA RESUPPLY
NO OTV REQD
PAYLOAD 35 HI-ALT STA RESUPPLY
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 21.497
PAYLOAD 40 LARGE POWER SYS TECHNOLOGY
NO OTV REQD
SORTED H ARRAY

INDEX	#FLTS	MASS	LENGTH	INCLIN
33	2	22.00	14.00	29.00
21	-1	20.00	12.00	29.00
30	11	25.00	12.00	29.00
32	3	25.00	12.00	29.00
31	1	15.00	10.00	29.00
27	1	5.00	8.00	0.00
34	8	15.00	8.00	29.00
6	2	8.00	6.00	98.00
26	1	5.00	6.00	0.00
29	1	7.00	6.00	29.00
28	3	1.80	4.40	0.00
7	1	2.40	4.00	98.00
301	1	3.00	3.00	29.00
19	3	4.00	2.00	29.00
40	-1	1.20	2.00	29.00
302	2	4.00	1.50	29.00
300	1	1.50	1.10	29.00

MANIFESTING RECORD

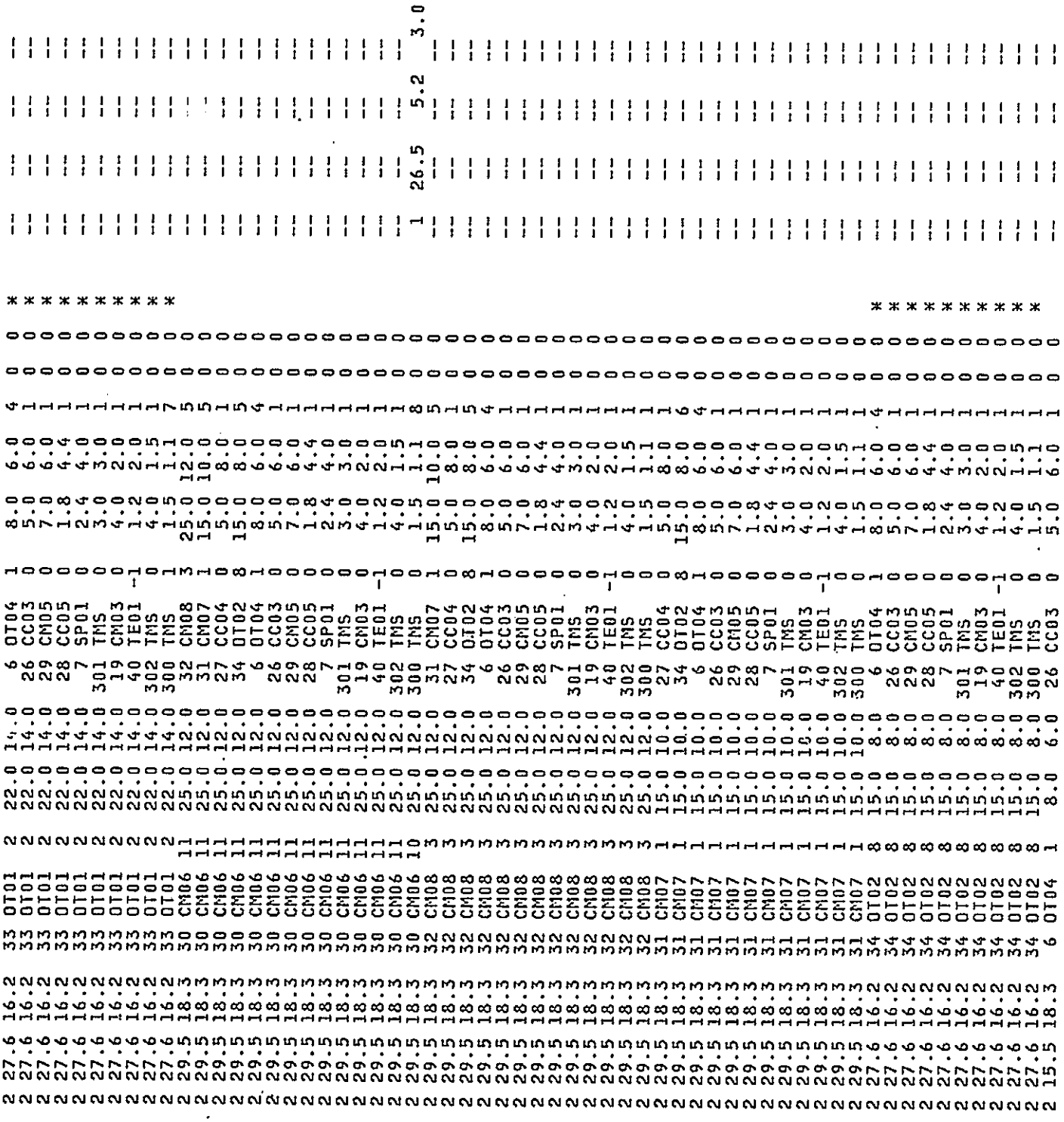
NP	WT AV	LEN AV	*****MAIN P/L******** #	KEY	#FL	MASS	LEN	*****SEC P/L******** #	KEY	#FL	MASS	LEN	MC	MF	SF	DM RQ	DM OK	FLTS MAN	CG	FRE LEN	FRE MASS
1	27.6	10.1	33	OT01	2	22.0	14.0	21	SA02	-1	20.0	12.0	1	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	2	22.0	14.0	30	CM06	11	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	2	22.0	14.0	32	CM08	3	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	2	22.0	14.0	31	CM07	1	15.0	10.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	2	22.0	14.0	27	CC04	1	5.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	2	22.0	14.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	2	22.0	14.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	2	22.0	14.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	2	22.0	14.0	29	CM05	1	7.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	2	22.0	14.0	28	CC05	3	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	2	22.0	14.0	7	SP01	1	2.4	4.0	4	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	2	22.0	14.0	301	TMS	1	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	2	22.0	14.0	19	CM03	3	4.0	2.0	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	2	22.0	14.0	40	TE01	-1	1.2	2.0	1	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	2	22.0	14.0	302	TMS	2	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	33	OT01	2	22.0	14.0	300	TMS	1	1.5	1.1	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	11	25.0	12.0	32	CM08	3	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	11	25.0	12.0	31	CM07	1	15.0	10.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	11	25.0	12.0	27	CC04	1	5.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	11	25.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	11	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	11	25.0	12.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	11	25.0	12.0	29	CM05	1	7.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	11	25.0	12.0	28	CC05	3	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	11	25.0	12.0	7	SP01	1	2.4	4.0	4	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	11	25.0	12.0	301	TMS	1	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	11	25.0	12.0	19	CM03	3	4.0	2.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	11	25.0	12.0	40	TE01	-1	1.2	2.0	1	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	11	25.0	12.0	302	TMS	2	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	11	25.0	12.0	300	TMS	1	1.5	1.1	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	31	CM07	1	15.0	10.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	27	CC04	1	5.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	29	CM05	1	7.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	28	CC05	3	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	7	SP01	1	2.4	4.0	4	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	301	TMS	1	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	19	CM03	3	4.0	2.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	40	TE01	-1	1.2	2.0	1	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	302	TMS	2	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	3	25.0	12.0	300	TMS	1	1.5	1.1	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	27	CC04	1	5.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	29	CM05	1	7.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	28	CC05	3	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	7	SP01	1	2.4	4.0	4	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	301	TMS	1	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	19	CM03	3	4.0	2.0	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	40	TE01	-1	1.2	2.0	1	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	302	TMS	2	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	300	TMS	1	1.5	1.1	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--

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1	27.6	10.1	27	CC04	1	5.0	8.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	26	CC03	1	5.0	6.0	5	1	1	*	--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	29	CM05	1	7.0	6.0	5	1	1	*	--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	28	CC05	3	1.8	4.4	5	1	1	*	--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	7	SP01	1	2.4	4.0	4	1	1	*	--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	301	TMS	1	3.0	3.0	5	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											15.200									
1	27.6	10.1	27	CC04	0	5.0	8.0	19	CM03	2	4.0	2.0	8	1	1	*	1	27.1	0.1	0.8
1	27.6	10.1	27	CC04	0	5.0	8.0	40	TE01	-1	1.2	2.0	1	1	1	*	--	--	--	--
1	27.6	10.1	27	CC04	0	5.0	8.0	302	TMS	2	4.0	1.5	1	1	1	*	--	--	--	--
1	27.6	10.1	27	CC04	0	5.0	8.0	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	26	CC03	1	5.0	6.0	5	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	29	CM05	1	7.0	6.0	5	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	28	CC05	3	1.8	4.4	5	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	7	SP01	1	2.4	4.0	4	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	301	TMS	1	3.0	3.0	5	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	19	CM03	2	4.0	2.0	7	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	40	TE01	-1	1.2	2.0	1	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	302	TMS	2	4.0	1.5	7	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	300	TMS	1	1.5	1.1	7	1	1	*	--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	26	CC03	1	5.0	6.0	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	29	CM05	1	7.0	6.0	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	28	CC05	3	1.8	4.4	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	1	8.0	6.0	7	SP01	0	2.4	4.0	8	0	0		1	24.7	8.3	5.1
1	15.5	18.3	6	OT04	1	8.0	6.0	301	TMS	1	3.0	3.0	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	1	8.0	6.0	19	CM03	2	4.0	2.0	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	1	8.0	6.0	40	TE01	-1	1.2	2.0	1	0	0		--	--	--	--
1	15.5	18.3	6	OT04	1	8.0	6.0	302	TMS	2	4.0	1.5	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	1	8.0	6.0	300	TMS	1	1.5	1.1	4	0	0		--	--	--	--
1	27.6	10.1	26	CC03	1	5.0	6.0	29	CM05	1	7.0	6.0	5	1	1	*	--	--	--	--
1	27.6	10.1	26	CC03	1	5.0	6.0	28	CC05	3	1.8	4.4	5	1	1	*	--	--	--	--
1	27.6	10.1	26	CC03	1	5.0	6.0	7	SP01	0	2.4	4.0	1	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											30.400									
1	27.6	10.1	26	CC03	0	5.0	6.0	301	TMS	0	3.0	3.0	8	1	1	*	1	27.1	1.1	1.8
1	27.6	10.1	26	CC03	0	5.0	6.0	19	CM03	2	4.0	2.0	1	1	1	*	--	--	--	--
1	27.6	10.1	26	CC03	0	5.0	6.0	40	TE01	-1	1.2	2.0	1	1	1	*	--	--	--	--
1	27.6	10.1	26	CC03	0	5.0	6.0	302	TMS	2	4.0	1.5	1	1	1	*	--	--	--	--
1	27.6	10.1	26	CC03	0	5.0	6.0	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--
1	27.6	10.1	29	CM05	1	7.0	6.0	28	CC05	3	1.8	4.4	5	1	1	*	--	--	--	--
1	27.6	10.1	29	CM05	1	7.0	6.0	7	SP01	0	2.4	4.0	1	1	1	*	--	--	--	--
1	27.6	10.1	29	CM05	1	7.0	6.0	301	TMS	0	3.0	3.0	1	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											45.600									
1	27.6	10.1	29	CM05	0	7.0	6.0	19	CM03	1	4.0	2.0	8	1	1	*	1	26.9	2.1	-1.2
1	27.6	10.1	29	CM05	0	7.0	6.0	40	TE01	-1	1.2	2.0	1	1	1	*	--	--	--	--
1	27.6	10.1	29	CM05	0	7.0	6.0	302	TMS	2	4.0	1.5	1	1	1	*	--	--	--	--
1	27.6	10.1	29	CM05	0	7.0	6.0	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--
1	27.6	10.1	28	CC05	3	1.8	4.4	7	SP01	0	2.4	4.0	1	1	1	*	--	--	--	--
1	27.6	10.1	28	CC05	3	1.8	4.4	301	TMS	0	3.0	3.0	1	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											60.800									
1	27.6	10.1	28	CC05	2	1.8	4.4	19	CM03	0	4.0	2.0	8	1	1	*	1	28.1	3.7	4.0
1	27.6	10.1	28	CC05	2	1.8	4.4	40	TE01	-1	1.2	2.0	1	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											91.200									
1	27.6	10.1	28	CC05	0	1.8	4.4	302	TMS	0	4.0	1.5	8	1	1	*	2	28.1	4.2	4.0
2	27.6	16.2	33	OT01	2	22.0	14.0	21	SA02	-1	20.0	12.0	1	0	0	*	--	--	--	--
2	27.6	16.2	33	OT01	2	22.0	14.0	30	CM06	11	25.0	12.0	5	0	0	*	--	--	--	--
2	27.6	16.2	33	OT01	2	22.0	14.0	32	CM08	3	25.0	12.0	5	0	0	*	--	--	--	--
2	27.6	16.2	33	OT01	2	22.0	14.0	31	CM07	1	15.0	10.0	5	0	0	*	--	--	--	--
2	27.6	16.2	33	OT01	2	22.0	14.0	27	CC04	0	5.0	8.0	1	0	0	*	--	--	--	--
2	27.6	16.2	33	OT01	2	22.0	14.0	34	OT02	8	15.0	8.0	5	0	0	*	--	--	--	--

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2	15.5	18.3	6	OT04	1	8.0	6.0	29	CM05	0	7.0	6.0	1	0	0	--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	28	CC05	0	1.8	4.4	1	0	0	--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	7	SP01	0	2.4	4.0	1	0	0	--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	301	TMS	0	3.0	3.0	1	0	0	--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	19	CM03	0	4.0	2.0	1	0	0	--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	40	TE01	-1	1.2	2.0	1	0	0	--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	302	TMS	0	4.0	1.5	1	0	0	--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	300	TMS	0	1.5	1.1	1	0	0	--	--	--	--
2	29.5	18.3	33	OT01	0	22.0	14.0	--	--	--	--	--	8	0	0	2	26.9	4.3	-6.5
2	29.5	18.3	30	CM06	0	25.0	12.0	--	--	--	--	--	8	0	0	10	27.1	6.3	-9.5
2	29.5	18.3	32	CM08	0	25.0	12.0	--	--	--	--	--	8	0	0	3	27.1	6.3	-9.5
2	29.5	18.3	31	CM07	0	15.0	10.0	--	--	--	--	--	8	0	0	1	26.0	8.3	0.5
2	29.5	18.3	34	OT02	0	15.0	8.0	--	--	--	--	--	8	0	0	8	26.0	10.3	0.5
2	15.5	18.3	6	OT04	0	8.0	6.0	--	--	--	--	--	8	0	0	1	23.5	12.3	7.5

PROPELLANT NEEDED THIS YEAR = 99.
PROPELLANT LEFT FROM PRIOR YEAR = 8.
PROPELLANT DELIVERED BY MINITANKER = 91.
PROPELLANT DELIVERED BY ET SCAVENGING = 0.

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MANI-FEST #	KEY REF	DESCRIPTION	MATCHED WITH	NO. FLTS	OTV USED	OTV EXP	P/L BAY LENGTH	LAUNCH MASS	TIME ON ORBIT	SP STA OPERATION
1	CC04	**MULTIBEAM COMM SATELLITE	CRYSTAL GROWTH RESUP-1	1	1	0	18.2	28.7	4.0	FS
2	OT04	HI-INCL STATION RESUPPLY	SPACE SCIENCE SUBSATELLITE	1	0	0	10.0	10.4	4.0	FS
3	CC03	**INTELSAT-7,7A CLASS COMSAT	TMS CAB DELIVERY	1	1	0	17.2	27.7	2.0	FS
4	CM05	**CONT FLOW ELEC TROPH PLATFOR	CRYSTAL GROWTH RESUP-1	1	0	0	16.2	30.7	4.0	FS
5	CC05	**RECONFIGURABLE COMM. SATELLI	CRYSTAL GROWTH RESUP-1	1	1	0	14.6	25.5	4.0	FS
6	CC05	**RECONFIGURABLE COMM. SATELLI	TMS PROP DELIV	2	1	0	14.1	25.5	2.0	FS
7	CM06	CONTINUOUS FLOW ELECTRO RESUPP	TMS DELIVERY	1	0	0	13.1	26.5	2.0	FS
8	OT01	LOW INCL STA MODULE DEL		2	0	0	14.0	22.0	2.0	FS
9	CM06	CONTINUOUS FLOW ELECTRO RESUPP		10	0	0	12.0	25.0	2.0	C
10	CM08	GLASSPROC OPTICA LFIBERS RESUPP		3	0	0	12.0	25.0	2.0	C
11	CM07	GLASS PROC PLANT		1	0	0	10.0	15.0	2.0	C
12	OT02	LOW INCL STA RESUPPLY		8	0	0	8.0	15.0	2.0	C
13	OT04	HI-INCL STATION RESUPPLY		1	0	0	6.0	8.0	2.0	

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** - MANIFESTED WITH MINITANKER

NO. OF SHUTTLE FLIGHTS 33
NO. OF TMS OPS 13
NO. OF MANNED TMS OPS 13
NO. OF SELF:PROP SAT SERV OPS 1
TMS & SATELLITE PROPELLANT USED 4.68
NO. OF OTV REUSE FLIGHTS 5
NO. OF OTVS EXPENDED 0
SPACE STATION FLT SERVICE OPS 8
SPACE STATION CONSTR OPS 10
SPACE STATION PROP XFER OPS 6
HLLV FLIGHTS 0
FLEET TIME ON ORBIT = 74.0 DAYS
TOTAL FLEET TIME = 1229.0 DAYS
IDEAL MIN FLEET SIZE = 3.94 VEHICLES

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YEAR 1997

TMS MISSION SUMMARY

KEY	TITLE	CODE	TMS MISSION TYPE AUTO	MAN	RET/DEPLOY	SELF-PROP	NO. USES	PROP RQD
S001	EARTH OBSERV	SPCL						
S002	SYNTH APERTURE	SPCL						
S004	UPPER ATMOS	SPCL						
OT03	SPACE STATION	SSSS						
OT04	HI-INCL STATION	SORS						
SP01	SPACE SCIENCE	FSXX				X	1.0	0.0
SA01	VLBI/COSMIC	SPCL						
SL08	RAD BIOLOGY	SSSA						
SL01	HUMAN LIFE SI	SSSA						
SL04	LIFESCIENCES	SPXX						
SL05	CENTRIFUGE	SSCL						
SL06	CLOSED ENV	SPCL						
CM01	MATLS SCIENCE	SPXX						
CM02	CRYSTAL GROWTH	PMCL		X			4.0	0.4
CM03	CRYSTAL GROWTH	PMXX		X			3.0	0.4
CM04	CRYSTAL GROWTH	PMCL		X			4.0	0.4
SA03	ASTROPHYSICS	FMXM		X			1.0	0.4
SA04	ASTROPHYSICS	FMXM		X			1.0	0.4
CC03	INTELSAT-7,7A	FXCL						
CC04	MULTIBEAM COMM.	SSCM						
CC05	RECONFIGURABLE	FXCM						
CM05	CONT FLOW ELEC-	PMCL		X			0.0	0.4
CM06	CONTINUOUS FLOW	PMXL		X			4.0	0.4
CM07	GLASS PROC PLANT	SPCL						
CM08	GLASSPROC OPTICA	SPCL						
OT01	LOW INCL STA	SSSS						
OT02	LOW INCL STA	SORS						

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OT05 HI-ALT STA OMSB

TC01 ROBOTICS SSCM

TS02 TECH DEVEL SSSA

THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
NOT MANIFESTED ON TRANSPORTATION

THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
NOT MANIFESTED ON TRANSPORTATION

OT05 SPACE-BASED MANNED OTV
NOT MANIFESTED AS SHUTTLE PAYLOAD
PAYLOAD 4 UPPER ATMOS RESEARCH PKG
NO OTV REQD
PAYLOAD 6 HI-INCL STATION RESUPPLY
NO OTV REQD
PAYLOAD 8 SPACE PHYSICS PALLET
NO OTV REQD
PAYLOAD 10 RAD BIOLOGY IN SM MAMMALS

THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
NOT MANIFESTED ON TRANSPORTATION
PAYLOAD 13 PLANT DEVEL CARRY-ONS

THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
NOT MANIFESTED ON TRANSPORTATION
PAYLOAD 16 CLOSED ENV LSS EXPT MOD
NO OTV REQD
PAYLOAD 18 CRYSTAL GROWTH FACTORY/PLAT
NO OTV REQD
PAYLOAD 20 CRYSTAL GROWTH RESUP-2
NO OTV REQD
PAYLOAD 26 INTELSAT-7,7A CLASS COMSAT
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 14.170
PAYLOAD 27 MULTIBEAM COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 14.170
PAYLOAD 28 RECONFIGURABLE COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 9.315
PAYLOAD 30 CONTINUOUS FLOW ELECTRO RESUPP
NO OTV REQD
PAYLOAD 32 GLASSPROC OPTICA LFIBERS RESUPP
NO OTV REQD
PAYLOAD 34 LOW INCL STA RESUPPLY
NO OTV REQD
PAYLOAD 35 HI-ALT STA RESUPPLY
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 21.497
PAYLOAD 41 ROBOTICS TECH DEMO
NO OTV REQD
SORTED H ARRAY

INDEX	#FLTS	MASS	LENGTH	INCLIN
30	12	25.00	12.00	29.00
32	4	25.00	12.00	29.00
27	1	5.00	8.00	0.00
34	8	15.00	8.00	29.00

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4	1	4.00	7.00	98.00
18	1	10.00	7.00	29.00
6	2	8.00	6.00	98.00
26	1	5.00	6.00	0.00
8	-1	10.00	5.00	98.00
16	1	3.30	5.00	29.00
28	4	1.80	4.40	0.00
20	3	12.50	4.00	29.00
301	2	3.00	3.00	29.00
41	1	3.60	1.80	29.00
302	2	4.00	1.50	29.00
300	1	1.50	1.10	29.00

MANIFESTING RECORD

NP	WT AV	LEN AV	*****MAIN P/L******** #	KEY	#FL	MASS	LEN	*****SEC P/L******** #	KEY	#FL	MASS	LEN	MC	MF	SF	DM RQ	DM OK	FLTS MAN	CG	FRE LEN	FRE MASS
1	27.6	10.1	30	CM06	12	25.0	12.0	32	CM08	4	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	12	25.0	12.0	27	CC04	1	5.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	12	25.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	12	25.0	12.0	4	SO04	1	4.0	7.0	4	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	12	25.0	12.0	18	CM02	1	10.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	12	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	12	25.0	12.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	12	25.0	12.0	8	SP02	-1	10.0	5.0	1	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	12	25.0	12.0	16	SL06	1	3.3	5.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	12	25.0	12.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	12	25.0	12.0	20	CM04	3	12.5	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	12	25.0	12.0	301	TMS	2	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	12	25.0	12.0	41	TC01	1	3.6	1.8	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	12	25.0	12.0	302	TMS	2	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	12	25.0	12.0	300	TMS	1	1.5	1.1	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	4	25.0	12.0	27	CC04	1	5.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	4	25.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	4	25.0	12.0	4	SO04	1	4.0	7.0	4	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	4	25.0	12.0	18	CM02	1	10.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	4	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	4	25.0	12.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	4	25.0	12.0	8	SP02	-1	10.0	5.0	1	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	4	25.0	12.0	16	SL06	1	3.3	5.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	4	25.0	12.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	4	25.0	12.0	20	CM04	3	12.5	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	4	25.0	12.0	301	TMS	2	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	4	25.0	12.0	41	TC01	1	3.6	1.8	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	4	25.0	12.0	302	TMS	2	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	4	25.0	12.0	300	TMS	1	1.5	1.1	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	4	SO04	1	4.0	7.0	4	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	18	CM02	1	10.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	8	SP02	-1	10.0	5.0	1	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	16	SL06	1	3.3	5.0	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	20	CM04	3	12.5	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	301	TMS	2	3.0	3.0	5	1	1	*		--	--	--	--

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PROPELLANT DELIVERED USING MINITANKER IS NOW 15.200

1	27.6	10.1	27	CC04	0	5.0	8.0	41	TC01	0	3.6	1.8	8	1	1	*		1	27.1	0.3	1.2			
1	27.6	10.1	27	CC04	0	5.0	8.0	302	TMS	2	4.0	1.5	1	1	1	*		--	--	--	--			
1	27.6	10.1	27	CC04	0	5.0	8.0	300	TMS	1	1.5	1.1	1	1	1	*		--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	4	SO04	1	4.0	7.0	4	1	1	*		--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	18	CM02	1	10.0	7.0	5	1	1	*		--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	8	SP02	-1	10.0	5.0	1	1	1	*		--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	16	SL06	1	3.3	5.0	5	1	1	*		--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	20	CM04	3	12.5	4.0	5	1	1	*		--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	301	TMS	2	3.0	3.0	5	1	1	*		--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	41	TC01	0	3.6	1.8	1	1	1	*		--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	302	TMS	2	4.0	1.5	7	1	1	*		--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	300	TMS	1	1.5	1.1	7	1	1	*		--	--	--	--			
1	15.5	18.3	4	SO04	1	4.0	7.0	18	CM02	1	10.0	7.0	4	0	0			--	--	--	--			

DOCKING MODULE ADDED

1	15.5	18.3	4	SO04	0	4.0	7.0	6	OT04	1	8.0	6.0	8	0	0		*	1	27.6	3.2	1.6			
1	15.5	18.3	4	SO04	0	4.0	7.0	26	CC03	1	5.0	6.0	1	0	0			--	--	--	--			
1	15.5	18.3	4	SO04	0	4.0	7.0	8	SP02	-1	10.0	5.0	1	0	0			--	--	--	--			
1	15.5	18.3	4	SO04	0	4.0	7.0	16	SL06	1	3.3	5.0	1	0	0			--	--	--	--			
1	15.5	18.3	4	SO04	0	4.0	7.0	28	CC05	4	1.8	4.4	1	0	0			--	--	--	--			
1	15.5	18.3	4	SO04	0	4.0	7.0	20	CM04	3	12.5	4.0	1	0	0			--	--	--	--			
1	15.5	18.3	4	SO04	0	4.0	7.0	301	TMS	2	3.0	3.0	1	0	0			--	--	--	--			
1	15.5	18.3	4	SO04	0	4.0	7.0	41	TC01	0	3.6	1.8	1	0	0			--	--	--	--			
1	15.5	18.3	4	SO04	0	4.0	7.0	302	TMS	2	4.0	1.5	1	0	0			--	--	--	--			
1	15.5	18.3	4	SO04	0	4.0	7.0	300	TMS	1	1.5	1.1	1	0	0			--	--	--	--			
1	27.6	10.1	18	CM02	1	10.0	7.0	6	OT04	1	8.0	6.0	4	1	1	*		--	--	--	--			
1	27.6	10.1	18	CM02	1	10.0	7.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--			
1	27.6	10.1	18	CM02	1	10.0	7.0	8	SP02	-1	10.0	5.0	1	1	1	*		--	--	--	--			
1	27.6	10.1	18	CM02	1	10.0	7.0	16	SL06	1	3.3	5.0	5	1	1	*		--	--	--	--			
1	27.6	10.1	18	CM02	1	10.0	7.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--			
1	27.6	10.1	18	CM02	1	10.0	7.0	20	CM04	3	12.5	4.0	5	1	1	*		--	--	--	--			

PROPELLANT DELIVERED USING MINITANKER IS NOW 30.239

1	27.6	10.1	18	CM02	0	10.0	7.0	301	TMS	1	3.0	3.0	8	1	1	*		1	26.2	0.1	-3.0			
1	27.6	10.1	18	CM02	0	10.0	7.0	41	TC01	0	3.6	1.8	1	1	1	*		--	--	--	--			
1	27.6	10.1	18	CM02	0	10.0	7.0	302	TMS	2	4.0	1.5	1	1	1	*		--	--	--	--			
1	27.6	10.1	18	CM02	0	10.0	7.0	300	TMS	1	1.5	1.1	1	1	1	*		--	--	--	--			
1	15.5	18.3	6	OT04	1	8.0	6.0	26	CC03	1	5.0	6.0	4	0	0			--	--	--	--			
1	15.5	18.3	6	OT04	1	8.0	6.0	8	SP02	-1	10.0	5.0	1	0	0			--	--	--	--			
1	15.5	18.3	6	OT04	1	8.0	6.0	16	SL06	1	3.3	5.0	4	0	0			--	--	--	--			
1	15.5	18.3	6	OT04	1	8.0	6.0	28	CC05	4	1.8	4.4	4	0	0			--	--	--	--			
1	15.5	18.3	6	OT04	1	8.0	6.0	20	CM04	3	12.5	4.0	4	0	0			--	--	--	--			
1	15.5	18.3	6	OT04	1	8.0	6.0	301	TMS	1	3.0	3.0	4	0	0			--	--	--	--			
1	15.5	18.3	6	OT04	1	8.0	6.0	41	TC01	0	3.6	1.8	1	0	0			--	--	--	--			
1	15.5	18.3	6	OT04	1	8.0	6.0	302	TMS	2	4.0	1.5	4	0	0			--	--	--	--			
1	15.5	18.3	6	OT04	1	8.0	6.0	300	TMS	1	1.5	1.1	4	0	0			--	--	--	--			
1	27.6	10.1	26	CC03	1	5.0	6.0	8	SP02	-1	10.0	5.0	1	1	1	*		--	--	--	--			
1	27.6	10.1	26	CC03	1	5.0	6.0	16	SL06	1	3.3	5.0	5	1	1	*		--	--	--	--			
1	27.6	10.1	26	CC03	1	5.0	6.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--			
1	27.6	10.1	26	CC03	1	5.0	6.0	20	CM04	3	12.5	4.0	7	1	1	*		--	--	--	--			

PROPELLANT DELIVERED USING MINITANKER IS NOW 45.438

1	27.6	10.1	26	CC03	0	5.0	6.0	301	TMS	0	3.0	3.0	8	1	1	*		1	27.1	1.1	1.8			
1	27.6	10.1	26	CC03	0	5.0	6.0	41	TC01	0	3.6	1.8	1	1	1	*		--	--	--	--			
1	27.6	10.1	26	CC03	0	5.0	6.0	302	TMS	2	4.0	1.5	1	1	1	*		--	--	--	--			
1	27.6	10.1	26	CC03	0	5.0	6.0	300	TMS	1	1.5	1.1	1	1	1	*		--	--	--	--			

PROPELLANT DELIVERED USING MINITANKER IS NOW 60.639

1	27.6	10.1	16	SL06	0	3.3	5.0	28	CC05	3	1.8	4.4	8	1	1	*		1	27.7	0.7	4.7			

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1	27.6	10.1	16	SL06	0	3.3	5.0	20	CM04	3	12.5	4.0	1	1	1	*	--	--	--	--
1	27.6	10.1	16	SL06	0	3.3	5.0	301	TMS	0	3.0	3.0	1	1	1	*	--	--	--	--
1	27.6	10.1	16	SL06	0	3.3	5.0	41	TC01	0	3.6	1.8	1	1	1	*	--	--	--	--
1	27.6	10.1	16	SL06	0	3.3	5.0	302	TMS	2	4.0	1.5	1	1	1	*	--	--	--	--
1	27.6	10.1	16	SL06	0	3.3	5.0	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											102.049										
1	27.6	10.1	28	CC05	0	1.8	4.4	20	CM04	0	12.5	4.0	8	1	1	*	3	26.8	1.7	-3.0
1	27.6	10.1	28	CC05	0	1.8	4.4	301	TMS	0	3.0	3.0	1	1	1	*	--	--	--	--
1	27.6	10.1	28	CC05	0	1.8	4.4	41	TC01	0	3.6	1.8	1	1	1	*	--	--	--	--
1	27.6	10.1	28	CC05	0	1.8	4.4	302	TMS	2	4.0	1.5	1	1	1	*	--	--	--	--
1	27.6	10.1	28	CC05	0	1.8	4.4	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											117.249										
1	27.6	10.1	302	TMS	1	4.0	1.5	300	TMS	0	1.5	1.1	8	1	1	*	1	28.3	7.5	4.3
2	29.5	18.3	30	CM06	12	25.0	12.0	32	CM08	4	25.0	12.0	5	0	0		--	--	--	--
2	29.5	18.3	30	CM06	12	25.0	12.0	27	CC04	0	5.0	8.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	12	25.0	12.0	34	OT02	8	15.0	8.0	5	0	0		--	--	--	--
2	29.5	18.3	30	CM06	12	25.0	12.0	4	SO04	0	4.0	7.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	12	25.0	12.0	18	CM02	0	10.0	7.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	12	25.0	12.0	6	OT04	1	8.0	6.0	4	0	0		--	--	--	--
2	29.5	18.3	30	CM06	12	25.0	12.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	12	25.0	12.0	8	SP02	-1	10.0	5.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	12	25.0	12.0	16	SL06	0	3.3	5.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	12	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	12	25.0	12.0	20	CM04	0	12.5	4.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	12	25.0	12.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	12	25.0	12.0	41	TC01	0	3.6	1.8	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	11	25.0	12.0	302	TMS	0	4.0	1.5	8	0	0		1	26.1	4.8	0.5
2	29.5	18.3	30	CM06	11	25.0	12.0	300	TMS	0	1.5	1.1	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	4	25.0	12.0	27	CC04	0	5.0	8.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	4	25.0	12.0	34	OT02	8	15.0	8.0	5	0	0		--	--	--	--
2	29.5	18.3	32	CM08	4	25.0	12.0	4	SO04	0	4.0	7.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	4	25.0	12.0	18	CM02	0	10.0	7.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	4	25.0	12.0	6	OT04	1	8.0	6.0	4	0	0		--	--	--	--
2	29.5	18.3	32	CM08	4	25.0	12.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	4	25.0	12.0	8	SP02	-1	10.0	5.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	4	25.0	12.0	16	SL06	0	3.3	5.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	4	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	4	25.0	12.0	20	CM04	0	12.5	4.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	4	25.0	12.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	4	25.0	12.0	41	TC01	0	3.6	1.8	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	4	25.0	12.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	4	25.0	12.0	300	TMS	0	1.5	1.1	1	0	0		--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	4	SO04	0	4.0	7.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	18	CM02	0	10.0	7.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	6	OT04	1	8.0	6.0	4	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	26	CC03	0	5.0	6.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	8	SP02	-1	10.0	5.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	16	SL06	0	3.3	5.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	28	CC05	0	1.8	4.4	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	20	CM04	0	12.5	4.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	301	TMS	0	3.0	3.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	41	TC01	0	3.6	1.8	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	302	TMS	0	4.0	1.5	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	300	TMS	0	1.5	1.1	1	0	0	*	--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	8	SP02	-1	10.0	5.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	16	SL06	0	3.3	5.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	20	CM04	0	12.5	4.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--

2	15.5	18.3	6	OT04	1	8.0	6.0	41	TC01	0	3.6	1.8	1	0	0	--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	302	TMS	0	4.0	1.5	1	0	0	--	--	--	--
2	15.5	18.3	6	OT04	1	8.0	6.0	300	TMS	0	1.5	1.1	1	0	0	--	--	--	--
2	29.5	18.3	30	CM06	0	25.0	12.0	--	--	--	--	--	8	0	0	11	27.1	6.3	-9.5
2	29.5	18.3	32	CM08	0	25.0	12.0	--	--	--	--	--	8	0	0	4	27.1	6.3	-9.5
2	29.5	18.3	34	OT02	0	15.0	8.0	--	--	--	--	--	8	0	0	8	26.0	10.3	0.5
2	15.5	18.3	6	OT04	0	8.0	6.0	--	--	--	--	--	8	0	0	1	23.5	12.3	7.5

PROPELLANT NEEDED THIS YEAR = 109.
PROPELLANT LEFT FROM PRIOR YEAR = 0.
PROPELLANT DELIVERED BY MINITANKER = 117.
PROPELLANT DELIVERED BY ET SCAVENGING = 0.

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MANIFEST #	KEY REF	DESCRIPTION	MATCHED WITH	NO. FLTS	OTV USED	OTV EXP	P/L BAY LENGTH	LAUNCH MASS	TIME ON ORBIT	SP STA OPERATION
1	CC04	**MULTIBEAM COMM SATELLITE	ROBOTICS TECH DEMO	1	1	0	18.0	28.3	4.0	FS
2	S004	UPPER ATMOS RESEARCH PKG	HI-INCL STATION RESUPPLY	1	0	0	15.1	13.9	4.0	FS
3	CM02	**CRYSTAL GROWTH FACTORY/PLAT	TMS CAB DELIVERY	1	0	0	18.2	32.5	2.0	FS
4	CC03	**INTELSAT-7,7A CLASS COMSAT	TMS CAB DELIVERY	1	1	0	17.2	27.7	2.0	FS
5	SL06	**CLOSED ENV LSS EXPT MOD	RECONFIGURABLE COMM. SATELLITE	1	1	0	17.6	24.8	4.0	FS
6	CC05	**RECONFIGURABLE COMM. SATELLI	CRYSTAL GROWTH RESUP-2	3	1	0	16.6	32.5	4.0	FS
7	NONE		TMS DELIVERY	1	0	0	10.8	25.1	0.0	FS
8	CM06	CONTINUOUS FLOW ELECTRO RESUPP	TMS PROP DELIV	1	0	0	13.5	29.0	2.0	FS
9	CM06	CONTINUOUS FLOW ELECTRO RESUPP		11	0	0	12.0	25.0	2.0	C
10	CM08	GLASSPROC OPTICA LFIBERS RESUPP		4	0	0	12.0	25.0	2.0	C
11	OT02	LOW INCL STA RESUPPLY		8	0	0	8.0	15.0	2.0	C
12	OT04	HI-INCL STATION RESUPPLY		1	0	0	6.0	8.0	2.0	C

** - MANIFESTED WITH MINITANKER

```
NO. OF SHUTTLE FLIGHTS     34
 NO. OF TMS OPS      17
 NO. OF MANNED TMS OPS       17
 NO. OF SELF:PROP SAT SERV OPS       1
 TMS & SATELLITE PROPELLANT USED          6.10
NO. OF OTV REUSE FLIGHTS      6
NO. OF OTVS EXPENDED      0
SPACE STATION FLT SERVICE OPS     10
SPACE STATION CONSTR OPS     12
SPACE STATION PROP XFER OPS      8
HLLV FLIGHTS      0
 FLEET TIME ON ORBIT =      78.0 DAYS
 TOTAL FLEET TIME =    1268.0 DAYS
 IDEAL MIN FLEET SIZE =      4.06 VEHICLES
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YEAR 1998

TMS MISSION SUMMARY

KEY	TITLE	CODE	TMS MISSION TYPE AUTO	MAN	RET/DEPLOY	SELF-PROP	NO. USES	PROP RQD
S001	EARTH OBSERV	SPCL						
S002	SYNTH APERTURE	SPCL						
S003	HETERODYNING	SPXX						
S004	UPPER ATMOS	SPCL						
OT03	SPACE STATION	SSSS						
OT04	HI-INCL STATION	SORS						
SP01	SPACE SCIENCE	FSXX				X	1.0	0.0
SA01	VLBI/COSMIC	SPCL						
SL08	RAD BIOLOGY	SSSA						
SL01	HUMAN LIFE SI	SSSA						
SL04	LIFESCIENCES	SPXX						
SL05	CENTRIFUGE	SSCL						
SL06	CLOSED ENV	SPCL						
CM01	MATLS SCIENCE	SPXX						
CM02	CRYSTAL GROWTH	PMCL		X			4.0	0.4
CM03	CRYSTAL GROWTH	PMXX		X			3.0	0.4
CM04	CRYSTAL GROWTH	PMCL		X			4.0	0.4
SA02	ASTRO TELESCOPE	SPXX						
SA04	ASTROPHYSICS	FMXM		X			1.0	0.4
CC03	INTELSAT-7,7A	FXCL						
CC04	MULTIBEAM COMM.	SSCM						
CC05	RECONFIGURABLE	FXCM						
CM05	CONT FLOW ELEC-	PMCL		X			0.0	0.4
CM06	CONTINUOUS FLOW	PMXL		X			4.0	0.4
CM07	GLASS PROC PLANT	SPCL						
CM08	GLASSPROC OPTICA	SPCL						
OT01	LOW INCL STA	SSSS						

OT02 LOW INCL STA SORS

OT05 HI-ALT STA OMSB

TS02 TECH DEVEL SSSA

OT05 SPACE-BASED MANNED OTV
NOT MANIFESTED AS SHUTTLE PAYLOAD
PAYLOAD 3 HETERODYNING CO2 LIDAR
NO OTV REQD
PAYLOAD 6 HI-INCL STATION RESUPPLY
NO OTV REQD
PAYLOAD 20 CRYSTAL GROWTH RESUP-2
NO OTV REQD
PAYLOAD 21 ASTRO TELESCOPE CLUSTER
NO OTV REQD
PAYLOAD 22 ASTROPHYSICS FREE-FLYER
NO OTV REQD
PAYLOAD 26 INTELSAT-7,7A CLASS COMSAT
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 14.170
PAYLOAD 27 MULTIBEAM COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 14.170
PAYLOAD 28 RECONFIGURABLE COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 9.315
PAYLOAD 30 CONTINUOUS FLOW ELECTRO RESUPP
NO OTV REQD
PAYLOAD 32 GLASSPROC OPTICA LFIBERS RESUPP
NO OTV REQD
PAYLOAD 34 LOW INCL STA RESUPPLY
NO OTV REQD
PAYLOAD 35 HI-ALT STA RESUPPLY
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 21.497
PAYLOAD 41 ROBOTICS TECH DEMO
NO OTV REQD
SORTED H ARRAY

INDEX	#FLTS	MASS	LENGTH	INCLIN
21	1	20.00	12.00	29.00
22	-1	17.00	12.00	29.00
30	14	25.00	12.00	29.00
32	5	25.00	12.00	29.00
27	1	5.00	8.00	0.00
34	8	15.00	8.00	29.00
6	2	8.00	6.00	98.00
26	1	5.00	6.00	0.00
28	4	1.80	4.40	0.00
3	1	1.20	4.00	98.00
20	4	12.50	4.00	29.00
301	1	3.00	3.00	29.00
41	-1	3.60	1.80	29.00
302	2	4.00	1.50	29.00

NP	WT AV	LEN AV	MAIN P/L #	KEY	#FL	MASS	LEN	SEC P/L #	KEY	#FL	MASS	LEN	MC	MF	SF	DM RQ	FLTS OK	FLTS MAN	CG	FRE LEN	FRE MASS
1	27.6	10.1	21	SA02	1	20.0	12.0	22	SA03	-1	17.0	12.0	1	1	1	*		--	--	--	--
1	27.6	10.1	21	SA02	1	20.0	12.0	30	CM06	14	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	21	SA02	1	20.0	12.0	32	CM08	5	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	21	SA02	1	20.0	12.0	27	CC04	1	5.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	21	SA02	1	20.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	21	SA02	1	20.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	21	SA02	1	20.0	12.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	21	SA02	1	20.0	12.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	21	SA02	1	20.0	12.0	3	SO03	1	1.2	4.0	4	1	1	*		--	--	--	--
1	27.6	10.1	21	SA02	1	20.0	12.0	20	CM04	4	12.5	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	21	SA02	1	20.0	12.0	301	TMS	1	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	21	SA02	1	20.0	12.0	41	TC01	-1	3.6	1.8	1	1	1	*		--	--	--	--
1	27.6	10.1	21	SA02	1	20.0	12.0	302	TMS	2	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	14	25.0	12.0	32	CM08	5	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	14	25.0	12.0	27	CC04	1	5.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	14	25.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	14	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	14	25.0	12.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	14	25.0	12.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	14	25.0	12.0	3	SO03	1	1.2	4.0	4	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	14	25.0	12.0	20	CM04	4	12.5	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	14	25.0	12.0	301	TMS	1	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	14	25.0	12.0	41	TC01	-1	3.6	1.8	1	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	14	25.0	12.0	302	TMS	2	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	5	25.0	12.0	27	CC04	1	5.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	5	25.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	5	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	5	25.0	12.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	5	25.0	12.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	5	25.0	12.0	3	SO03	1	1.2	4.0	4	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	5	25.0	12.0	20	CM04	4	12.5	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	5	25.0	12.0	301	TMS	1	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	5	25.0	12.0	41	TC01	-1	3.6	1.8	1	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	5	25.0	12.0	302	TMS	2	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	3	SO03	1	1.2	4.0	4	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	20	CM04	4	12.5	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	301	TMS	1	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	41	TC01	-1	3.6	1.8	1	1	1	*		--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW												15.200									
1	27.6	10.1	27	CC04	0	5.0	8.0	302	TMS	1	4.0	1.5	8	1	1	*		1	27.2	0.6	0.8
1	27.6	10.1	34	OT02	8	15.0	8.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	3	SO03	1	1.2	4.0	4	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	20	CM04	4	12.5	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	301	TMS	1	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	41	TC01	-1	3.6	1.8	1	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	302	TMS	1	4.0	1.5	7	1	1	*		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	26	CC03	1	5.0	6.0	4	0	0			--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	28	CC05	4	1.8	4.4	4	0	0			--	--	--	--
1	15.5	18.3	6	OT04	1	8.0	6.0	3	SO03	0	1.2	4.0	8	0	0			1	24.2	8.3	6.3
1	15.5	18.3	6	OT04	1	8.0	6.0	20	CM04	4	12.5	4.0	4	0	0			--	--	--	--
1	15.5	18.3	6	OT04	1	8.0	6.0	301	TMS	1	3.0	3.0	4	0	0			--	--	--	--
1	15.5	18.3	6	OT04	1	8.0	6.0	41	TC01	-1	3.6	1.8	1	0	0			--	--	--	--

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 1 15.5 18.3   6 OT04  1   8.0   6.0 302 TMS   1   4.0  1.5  4  0  0
 1 27.6 10.1  26 CC03  1   5.0   6.0  28 CC05  4   1.8  4.4  5  1  1  *      --   --   --   --
 1 27.6 10.1  26 CC03  1   5.0   6.0   3 SO03  0   1.2  4.0  1  1  1  *      --   --   --   --
 1 27.6 10.1  26 CC03  1   5.0   6.0  20 CM04  4  12.5  4.0  7  1  1  *      --   --   --   --
PROPELLANT DELIVERED USING MINITANKER IS NOW      30.400
 1 27.6 10.1  26 CC03  0   5.0   6.0 301 TMS   0   3.0  3.0  8  1  1  *       1  27.1   1.1   1.8
 1 27.6 10.1  26 CC03  0   5.0   6.0  41 TC01 -1   3.6  1.8  1  1  1  *      --   --   --   --
 1 27.6 10.1  26 CC03  0   5.0   6.0 302 TMS   1   4.0  1.5  1  1  1  *      --   --   --   --
 1 27.6 10.1  28 CC05  4   1.8   4.4   3 SO03  0   1.2  4.0  1  1  1  *      --   --   --   --
PROPELLANT DELIVERED USING MINITANKER IS NOW      85.614
 1 27.6 10.1  28 CC05  0   1.8   4.4  20 CM04  0  12.5  4.0  8  1  1  *       4  26.8   1.7  -3.0
 1 27.6 10.1  28 CC05  0   1.8   4.4 301 TMS   0   3.0  3.0  1  1  1  *      --   --   --   --
 1 27.6 10.1  28 CC05  0   1.8   4.4  41 TC01 -1   3.6  1.8  1  1  1  *      --   --   --   --
 1 27.6 10.1  28 CC05  0   1.8   4.4 302 TMS   1   4.0  1.5  1  1  1  *      --   --   --   --
 1 15.5 18.3   6 OT04  0   8.0   6.0  --  --   --  --   --   8  0  0  *       1  24.5  12.3  19.6
PROPELLANT DELIVERED USING MINITANKER IS NOW      98.643
 1 27.6 16.2 302 TMS   0   4.0   1.5  --  --   --  --   --   8  1  1  *       1  28.3  14.7   8.1
 2 29.5 18.3  21 SA02  1  20.0  12.0  22 SA03 -1  17.0 12.0  1  0  1         --   --   --   --
 2 29.5 18.3  21 SA02  1  20.0  12.0  30 CM06 14  25.0 12.0  5  0  1         --   --   --   --
 2 29.5 18.3  21 SA02  1  20.0  12.0  32 CM08  5  25.0 12.0  5  0  1         --   --   --   --
 2 29.5 18.3  21 SA02  1  20.0  12.0  27 CC04  0   5.0  8.0  1  0  1         --   --   --   --
 2 29.5 18.3  21 SA02  1  20.0  12.0  34 OT02  8  15.0  8.0  5  0  1         --   --   --   --
 2 29.5 18.3  21 SA02  1  20.0  12.0   6 OT04  0   8.0  6.0  1  0  1         --   --   --   --
 2 29.5 18.3  21 SA02  1  20.0  12.0  26 CC03  0   5.0  6.0  1  0  1         --   --   --   --
 2 29.5 18.3  21 SA02  1  20.0  12.0  28 CC05  0   1.8  4.4  1  0  1         --   --   --   --
 2 29.5 18.3  21 SA02  1  20.0  12.0   3 SO03  0   1.2  4.0  1  0  1         --   --   --   --
 2 29.5 18.3  21 SA02  1  20.0  12.0  20 CM04  0  12.5  4.0  1  0  1         --   --   --   --
 2 29.5 18.3  21 SA02  1  20.0  12.0 301 TMS   0   3.0  3.0  1  0  1         --   --   --   --
 2 29.5 18.3  21 SA02  1  20.0  12.0  41 TC01 -1   3.6  1.8  1  0  1         --   --   --   --
 2 29.5 18.3  21 SA02  1  20.0  12.0 302 TMS   0   4.0  1.5  1  0  1         --   --   --   --
 2 29.5 18.3  30 CM06 14  25.0  12.0  32 CM08  5  25.0 12.0  5  0  1         --   --   --   --
 2 29.5 18.3  30 CM06 14  25.0  12.0  27 CC04  0   5.0  8.0  1  0  1         --   --   --   --
 2 29.5 18.3  30 CM06 14  25.0  12.0  34 OT02  8  15.0  8.0  5  0  1         --   --   --   --
 2 29.5 18.3  30 CM06 14  25.0  12.0   6 OT04  0   8.0  6.0  1  0  1         --   --   --   --
 2 29.5 18.3  30 CM06 14  25.0  12.0  26 CC03  0   5.0  6.0  1  0  1         --   --   --   --
 2 29.5 18.3  30 CM06 14  25.0  12.0  28 CC05  0   1.8  4.4  1  0  1         --   --   --   --
 2 29.5 18.3  30 CM06 14  25.0  12.0   3 SO03  0   1.2  4.0  1  0  1         --   --   --   --
 2 29.5 18.3  30 CM06 14  25.0  12.0  20 CM04  0  12.5  4.0  1  0  1         --   --   --   --
 2 29.5 18.3  30 CM06 14  25.0  12.0 301 TMS   0   3.0  3.0  1  0  1         --   --   --   --
 2 29.5 18.3  30 CM06 14  25.0  12.0  41 TC01 -1   3.6  1.8  1  0  1         --   --   --   --
 2 29.5 18.3  30 CM06 14  25.0  12.0 302 TMS   0   4.0  1.5  1  0  1         --   --   --   --
 2 29.5 18.3  32 CM08  5  25.0  12.0  27 CC04  0   5.0  8.0  1  0  1         --   --   --   --
 2 29.5 18.3  32 CM08  5  25.0  12.0  34 OT02  8  15.0  8.0  5  0  1         --   --   --   --
 2 29.5 18.3  32 CM08  5  25.0  12.0   6 OT04  0   8.0  6.0  1  0  1         --   --   --   --
 2 29.5 18.3  32 CM08  5  25.0  12.0  26 CC03  0   5.0  6.0  1  0  1         --   --   --   --
 2 29.5 18.3  32 CM08  5  25.0  12.0  28 CC05  0   1.8  4.4  1  0  1         --   --   --   --
 2 29.5 18.3  32 CM08  5  25.0  12.0   3 SO03  0   1.2  4.0  1  0  1         --   --   --   --
 2 29.5 18.3  32 CM08  5  25.0  12.0  20 CM04  0  12.5  4.0  1  0  1         --   --   --   --
 2 29.5 18.3  32 CM08  5  25.0  12.0 301 TMS   0   3.0  3.0  1  0  1         --   --   --   --
 2 29.5 18.3  32 CM08  5  25.0  12.0  41 TC01 -1   3.6  1.8  1  0  1         --   --   --   --
 2 29.5 18.3  32 CM08  5  25.0  12.0 302 TMS   0   4.0  1.5  1  0  1         --   --   --   --
 2 27.6 16.2  34 OT02  8  15.0   8.0   6 OT04  0   8.0  6.0  1  0  1  *      --   --   --   --
 2 27.6 16.2  34 OT02  8  15.0   8.0  26 CC03  0   5.0  6.0  1  0  1  *      --   --   --   --
 2 27.6 16.2  34 OT02  8  15.0   8.0  28 CC05  0   1.8  4.4  1  0  1  *      --   --   --   --
 2 27.6 16.2  34 OT02  8  15.0   8.0   3 SO03  0   1.2  4.0  1  0  1  *      --   --   --   --
 2 27.6 16.2  34 OT02  8  15.0   8.0  20 CM04  0  12.5  4.0  1  0  1  *      --   --   --   --
 2 27.6 16.2  34 OT02  8  15.0   8.0 301 TMS   0   3.0  3.0  1  0  1  *      --   --   --   --
 2 27.6 16.2  34 OT02  8  15.0   8.0  41 TC01 -1   3.6  1.8  1  0  1  *      --   --   --   --
 2 27.6 16.2  34 OT02  8  15.0   8.0 302 TMS   0   4.0  1.5  1  0  1  *      --   --   --   --
PRE-TANKER PROPELLANT IS NOW        3.400
```

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2	29.5	18.3	21	SA02	0	20.0	12.0	--	--	--	--	--	8	0	1	*	1	26.9	6.3	7.6
2	29.5	18.3	30	CM06	0	25.0	12.0	--	--	--	--	--	8	0	0	*	14	27.3	6.3	2.6
2	29.5	18.3	32	CM08	0	25.0	12.0	--	--	--	--	--	8	0	0	*	5	27.3	6.3	2.6
2	29.5	18.3	34	OT02	0	15.0	8.0	--	--	--	--	--	8	0	0	*	8	26.3	10.3	12.6

PROPELLANT NEEDED THIS YEAR = 109.
PROPELLANT LEFT FROM PRIOR YEAR = 9.
PROPELLANT DELIVERED BY MINITANKER = 99.
PROPELLANT DELIVERED BY ET SCAVENGING = 3.

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MANIFEST #	KEY REF	DESCRIPTION	MATCHED WITH	NO. FLTS	OTV USED	OTV EXP	P/L BAY LENGTH	LAUNCH MASS	TIME ON ORBIT	SP STA OPERATION
1	CC04	**MULTIBEAM COMM SATELLITE	TMS PROP DELIV	1	1	0	17.7	28.7	2.0	FS
2	OT04	HI-INCL STATION RESUPPLY	HETERODYNING CO2 LIDAR	1	0	0	10.0	9.2	4.0	FS
3	CC03	**INTELSAT-7,7A CLASS COMSAT	TMS CAB DELIVERY	1	1	0	17.2	27.7	2.0	FS
4	CC05	**RECONFIGURABLE COMM. SATELLI	CRYSTAL GROWTH RESUP-2	4	1	0	16.6	32.5	4.0	FS
5	OT04	HI-INCL STATION RESUPPLY		1	0	0	6.0	9.9	2.0	FS
6	NONE			1	0	0	9.7	29.5	0.0	FS
7	SA02	ASTRO TELESCOPE CLUSTER		1	0	0	13.5	25.8	2.0	FS
8	CM06	CONTINUOUS FLOW ELECTRO RESUPP		14	0	0	12.0	26.9	2.0	FS
9	CM08	GLASSPROC OPTICA LFIBERS RESUPP		5	0	0	12.0	26.9	2.0	C
10	OT02	LOW INCL STA RESUPPLY		8	0	0	8.0	16.9	2.0	C

** - MANIFESTED WITH MINITANKER

NO. OF SHUTTLE FLIGHTS 37
NO. OF TMS OPS 16
NO. OF MANNED TMS OPS 16
NO. OF SELF:PROP SAT SERV OPS 1
TMS & SATELLITE PROPELLANT USED 5.74
NO. OF OTV REUSE FLIGHTS 6
NO. OF OTVS EXPENDED 0

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SPACE STATION FLT SERVICE OPS      8
SPACE STATION CONSTR OPS     11
SPACE STATION PROP XFER OPS      7
HLLV FLIGHTS      0
 FLEET TIME ON ORBIT =      82.0 DAYS
 TOTAL FLEET TIME =    1377.0 DAYS
 IDEAL MIN FLEET SIZE =      4.41 VEHICLES
```

YEAR 1999

TMS MISSION SUMMARY

KEY	TITLE	CODE	TMS MISSION TYPE AUTO	MAN	RET/DEPLOY	SELF-PROP	NO. USES	PROP RQD
S001	EARTH OBSERV	SPCL						
S002	SYNTH APERTURE	SPCL						
S003	HETERODYNING	SPXX						
S004	UPPER ATMOS	SPCL						
OT03	SPACE STATION	SSSS						
OT04	HI-INCL STATION	SORS						
SA01	VLBI/COSMIC	SPCL						
SL08	RAD BIOLOGY	SSSA						
SL01	HUMAN LIFE SI	SSSA						
SL04	LIFESCIENCES	SPXX						
SL05	CENTRIFUGE	SSCL						
SL06	CLOSED ENV	SPCL						
CM01	MATLS SCIENCE	SPXX						
CM02	CRYSTAL GROWTH	PMCL		X			4.0	0.4
CM03	CRYSTAL GROWTH	PMXX		X			3.0	0.4
CM04	CRYSTAL GROWTH	PMCL		X			4.0	0.4
SA02	ASTRO TELESCOPE	SPXX						
SA04	ASTROPHYSICS	FMXM		X			1.0	0.4
CC03	INTELSAT-7,7A	FXCL						
CC04	MULTIBEAM COMM.	SSCM						
CC05	RECONFIGURABLE	FXCM						
CM05	CONT FLOW ELEC-	PMCL		X			0.0	0.4
CM06	CONTINUOUS FLOW	PMXL		X			4.0	0.4
CM07	GLASS PROC PLANT	SPCL						
CM08	GLASSPROC OPTICA	SPCL						
OT01	LOW INCL STA	SSSS						
OT02	LOW INCL STA	SORS						

OT05 HI-ALT STA OMSB

TS02 TECH DEVEL SSSA

OT05 SPACE-BASED MANNED OTV
NOT MANIFESTED AS SHUTTLE PAYLOAD
PAYLOAD 6 HI-INCL STATION RESUPPLY
NO OTV REQD
PAYLOAD 7 SPACE SCIENCE SUBSATELLITE
NO OTV REQD
PAYLOAD 18 CRYSTAL GROWTH FACTORY/PLAT
NO OTV REQD
PAYLOAD 20 CRYSTAL GROWTH RESUP-2
NO OTV REQD
PAYLOAD 26 INTELSAT-7,7A CLASS COMSAT
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 14.170
PAYLOAD 28 RECONFIGURABLE COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 9.315
PAYLOAD 30 CONTINUOUS FLOW ELECTRO RESUPP
NO OTV REQD
PAYLOAD 32 GLASSPROC OPTICA LFIBERS RESUPP
NO OTV REQD
PAYLOAD 34 LOW. INCL STA RESUPPLY
NO OTV REQD
PAYLOAD 35 HI-ALT STA RESUPPLY
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 21.497
SORTED H ARRAY

INDEX	#FLTS	MASS	LENGTH	INCLIN
30	16	25.00	12.00	29.00
32	6	25.00	12.00	29.00
34	8	15.00	8.00	29.00
18	1	10.00	7.00	29.00
6	2	8.00	6.00	98.00
26	1	5.00	6.00	0.00
28	4	1.80	4.40	0.00
7	-1	2.40	4.00	98.00
20	5	12.50	4.00	29.00
301	2	3.00	3.00	29.00
302	3	4.00	1.50	29.00
300	1	1.50	1.10	29.00

MANIFESTING RECORD

NP	WT AV	LEN AV	*****MAIN P/L******** #	KEY	#FL	MASS	LEN	*****SEC P/L******** #	KEY	#FL	MASS	LEN	MC	MF	SF	DM RQ	DM OK	DM MAN	FLTS	CG	FRE LEN	FRE MASS
1	27.6	10.1	30	CM06	16	25.0	12.0	32	CM08	6	25.0	12.0	5	1	1	*			--	--	--	--
1	27.6	10.1	30	CM06	16	25.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*			--	--	--	--
1	27.6	10.1	30	CM06	16	25.0	12.0	18	CM02	1	10.0	7.0	5	1	1	*			--	--	--	--
1	27.6	10.1	30	CM06	16	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*			--	--	--	--
1	27.6	10.1	30	CM06	16	25.0	12.0	26	CC03	1	5.0	6.0	5	1	1	*			--	--	--	--
1	27.6	10.1	30	CM06	16	25.0	12.0	28	CC05	4	1.8	4.4	5	1	1	*			--	--	--	--
1	27.6	10.1	30	CM06	16	25.0	12.0	7	SP01	-1	2.4	4.0	1	1	1	*			--	--	--	--
1	27.6	10.1	30	CM06	16	25.0	12.0	20	CM04	5	12.5	4.0	5	1	1	*			--	--	--	--

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1	27.6	10.1	30	CM06	16	25.0	12.0	301	TMS	2	3.0	3.0	5	1	1	*	--	--	--	--			
1	27.6	10.1	30	CM06	16	25.0	12.0	302	TMS	3	4.0	1.5	5	1	1	*	--	--	--	--			
1	27.6	10.1	30	CM06	16	25.0	12.0	300	TMS	1	1.5	1.1	5	1	1	*	--	--	--	--			
1	27.6	10.1	32	CM08	6	25.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*	--	--	--	--			
1	27.6	10.1	32	CM08	6	25.0	12.0	18	CM02	1	10.0	7.0	5	1	1	*	--	--	--	--			
1	27.6	10.1	32	CM08	6	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--			
1	27.6	10.1	32	CM08	6	25.0	12.0	26	CC03	1	5.0	6.0	5	1	1	*	--	--	--	--			
1	27.6	10.1	32	CM08	6	25.0	12.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--			
1	27.6	10.1	32	CM08	6	25.0	12.0	7	SP01	-1	2.4	4.0	1	1	1	*	--	--	--	--			
1	27.6	10.1	32	CM08	6	25.0	12.0	20	CM04	5	12.5	4.0	5	1	1	*	--	--	--	--			
1	27.6	10.1	32	CM08	6	25.0	12.0	301	TMS	2	3.0	3.0	5	1	1	*	--	--	--	--			
1	27.6	10.1	32	CM08	6	25.0	12.0	302	TMS	3	4.0	1.5	5	1	1	*	--	--	--	--			
1	27.6	10.1	32	CM08	6	25.0	12.0	300	TMS	1	1.5	1.1	5	1	1	*	--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	18	CM02	1	10.0	7.0	5	1	1	*	--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	26	CC03	1	5.0	6.0	5	1	1	*	--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	7	SP01	-1	2.4	4.0	1	1	1	*	--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	20	CM04	5	12.5	4.0	5	1	1	*	--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	301	TMS	2	3.0	3.0	5	1	1	*	--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	302	TMS	3	4.0	1.5	7	1	1	*	--	--	--	--			
1	27.6	10.1	34	OT02	8	15.0	8.0	300	TMS	1	1.5	1.1	7	1	1	*	--	--	--	--			
1	27.6	10.1	18	CM02	1	10.0	7.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--			
1	27.6	10.1	18	CM02	1	10.0	7.0	26	CC03	1	5.0	6.0	5	1	1	*	--	--	--	--			
1	27.6	10.1	18	CM02	1	10.0	7.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--			
1	27.6	10.1	18	CM02	1	10.0	7.0	7	SP01	-1	2.4	4.0	1	1	1	*	--	--	--	--			
1	27.6	10.1	18	CM02	1	10.0	7.0	20	CM04	5	12.5	4.0	5	1	1	*	--	--	--	--			
PROPELLANT DELIVERED USING MINITANKER IS NOW											15.038												
1	27.6	10.1	18	CM02	0	10.0	7.0	301	TMS	1	3.0	3.0	8	1	1	*	1	26.2	0.1	-3.0			
1	27.6	10.1	18	CM02	0	10.0	7.0	302	TMS	3	4.0	1.5	1	1	1	*	--	--	--	--			
1	27.6	10.1	18	CM02	0	10.0	7.0	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--			
1	15.5	18.3	6	OT04	2	8.0	6.0	26	CC03	1	5.0	6.0	4	0	0		--	--	--	--			
1	15.5	18.3	6	OT04	2	8.0	6.0	28	CC05	4	1.8	4.4	4	0	0		--	--	--	--			
1	15.5	18.3	6	OT04	2	8.0	6.0	7	SP01	-1	2.4	4.0	1	0	0		--	--	--	--			
1	15.5	18.3	6	OT04	2	8.0	6.0	20	CM04	5	12.5	4.0	4	0	0		--	--	--	--			
1	15.5	18.3	6	OT04	2	8.0	6.0	301	TMS	1	3.0	3.0	4	0	0		--	--	--	--			
1	15.5	18.3	6	OT04	2	8.0	6.0	302	TMS	3	4.0	1.5	4	0	0		--	--	--	--			
1	15.5	18.3	6	OT04	2	8.0	6.0	300	TMS	1	1.5	1.1	4	0	0		--	--	--	--			
1	27.6	10.1	26	CC03	1	5.0	6.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--			
1	27.6	10.1	26	CC03	1	5.0	6.0	7	SP01	-1	2.4	4.0	1	1	1	*	--	--	--	--			
1	27.6	10.1	26	CC03	1	5.0	6.0	20	CM04	5	12.5	4.0	7	1	1	*	--	--	--	--			
PROPELLANT DELIVERED USING MINITANKER IS NOW											30.239												
1	27.6	10.1	26	CC03	0	5.0	6.0	301	TMS	0	3.0	3.0	8	1	1	*	1	27.1	1.1	1.8			
1	27.6	10.1	26	CC03	0	5.0	6.0	302	TMS	3	4.0	1.5	1	1	1	*	--	--	--	--			
1	27.6	10.1	26	CC03	0	5.0	6.0	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--			
1	27.6	10.1	28	CC05	4	1.8	4.4	7	SP01	-1	2.4	4.0	1	1	1	*	--	--	--	--			
PROPELLANT DELIVERED USING MINITANKER IS NOW											85.452												
1	27.6	10.1	28	CC05	0	1.8	4.4	20	CM04	1	12.5	4.0	8	1	1	*	4	26.8	1.7	-3.0			
1	27.6	10.1	28	CC05	0	1.8	4.4	301	TMS	0	3.0	3.0	1	1	1	*	--	--	--	--			
1	27.6	10.1	28	CC05	0	1.8	4.4	302	TMS	3	4.0	1.5	1	1	1	*	--	--	--	--			
1	27.6	10.1	28	CC05	0	1.8	4.4	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--			
1	27.6	10.1	20	CM04	1	12.5	4.0	301	TMS	0	3.0	3.0	1	1	1	*	--	--	--	--			
PROPELLANT DELIVERED USING MINITANKER IS NOW											97.166												
1	27.6	10.1	20	CM04	0	12.5	4.0	302	TMS	2	4.0	1.5	8	1	1	*	1	26.2	4.6	-3.0			
2	29.5	18.3	30	CM06	16	25.0	12.0	32	CM08	6	25.0	12.0	5	0	0		--	--	--	--			
2	29.5	18.3	30	CM06	16	25.0	12.0	34	OT02	8	15.0	8.0	5	0	0		--	--	--	--			
2	29.5	18.3	30	CM06	16	25.0	12.0	18	CM02	0	10.0	7.0	1	0	0		--	--	--	--			
2	29.5	18.3	30	CM06	16	25.0	12.0	6	OT04	2	8.0	6.0	4	0	0		--	--	--	--			
2	29.5	18.3	30	CM06	16	25.0	12.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--			
2	29.5	18.3	30	CM06	16	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--			

2	29.5	18.3	30	CM06	16	25.0	12.0	7	SP01	-1	2.4	4.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	16	25.0	12.0	20	CM04	0	12.5	4.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	16	25.0	12.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	14	25.0	12.0	302	TMS	0	4.0	1.5	8	0	0		2	26.1	4.8	0.5
2	29.5	18.3	30	CM06	13	25.0	12.0	300	TMS	0	1.5	1.1	8	0	0		1	26.5	5.2	3.0
2	29.5	18.3	32	CM08	6	25.0	12.0	34	OT02	8	15.0	8.0	5	0	0		--	--	--	--
2	29.5	18.3	32	CM08	6	25.0	12.0	18	CM02	0	10.0	7.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	6	25.0	12.0	6	OT04	2	8.0	6.0	4	0	0		--	--	--	--
2	29.5	18.3	32	CM08	6	25.0	12.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	6	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	6	25.0	12.0	7	SP01	-1	2.4	4.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	6	25.0	12.0	20	CM04	0	12.5	4.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	6	25.0	12.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	6	25.0	12.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	6	25.0	12.0	300	TMS	0	1.5	1.1	1	0	0		--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	18	CM02	0	10.0	7.0	1	0	0		--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	6	OT04	2	8.0	6.0	4	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	26	CC03	0	5.0	6.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	28	CC05	0	1.8	4.4	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	7	SP01	-1	2.4	4.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	20	CM04	0	12.5	4.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	301	TMS	0	3.0	3.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	302	TMS	0	4.0	1.5	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	300	TMS	0	1.5	1.1	1	0	0	*	--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	7	SP01	-1	2.4	4.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	20	CM04	0	12.5	4.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	300	TMS	0	1.5	1.1	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	0	25.0	12.0	--	--	--	--	--	8	0	0		13	27.1	6.3	-9.5
2	29.5	18.3	32	CM08	0	25.0	12.0	--	--	--	--	--	8	0	0		6	27.1	6.3	-9.5
2	29.5	18.3	34	OT02	0	15.0	8.0	--	--	--	--	--	8	0	0		8	26.0	10.3	0.5
2	15.5	18.3	6	OT04	0	8.0	6.0	--	--	--	--	--	8	0	0		2	23.5	12.3	7.5

PROPELLANT NEEDED THIS YEAR = 94.
PROPELLANT LEFT FROM PRIOR YEAR = 2.
PROPELLANT DELIVERED BY MINITANKER = 97.
PROPELLANT DELIVERED BY ET SCAVENGING = 0.

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MANI-FEST #	KEY REF	DESCRIPTION	MATCHED WITH	NO. FLTS	OTV USED	OTV EXP	P/L BAY LENGTH	LAUNCH MASS	TIME ON ORBIT	SP STA OPERATION
1	CM02	**CRYSTAL GROWTH FACTORY/PLAT	TMS CAB DELIVERY	1	0	0	18.2	32.5	2.0	FS
2	CC03	**INTELSAT-7,7A CLASS COMSAT	TMS CAB DELIVERY	1	1	0	17.2	27.7	2.0	FS
3	CC05	**RECONFIGURABLE COMM. SATELLI	CRYSTAL GROWTH RESUP-2	4	1	0	16.6	32.5	4.0	FS
4	CM04	**CRYSTAL GROWTH RESUP-2	TMS PROP DELIV	1	0	0	13.7	32.5	2.0	FS
5	CM06	CONTINUOUS FLOW ELECTRO RESUPP	TMS PROP DELIV	2	0	0	13.5	29.0	2.0	FS
6	CM06	CONTINUOUS FLOW ELECTRO RESUPP	TMS DELIVERY	1	0	0	13.1	26.5	2.0	FS
7	CM06	CONTINUOUS FLOW ELECTRO RESUPP		13	0	0	12.0	25.0	2.0	FS
8	CM08	GLASSPROC OPTICA LFIBERS RESUPP		6	0	0	12.0	25.0	2.0	C
9	OT02	LOW INCL STA RESUPPLY		8	0	0	8.0	15.0	2.0	C
10	OT04	HI-INCL STATION RESUPPLY		2	0	0	6.0	8.0	2.0	C

** - MANIFESTED WITH MINITANKER

NO. OF SHUTTLE FLIGHTS 39
NO. OF TMS OPS 16
NO. OF MANNED TMS OPS 16
NO. OF SELF:PROP SAT SERV OPS 0
TMS & SATELLITE PROPELLANT USED 5.70
NO. OF OTV REUSE FLIGHTS 5
NO. OF OTVS EXPENDED 0

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SPACE STATION FLT SERVICE OPS     10
SPACE STATION CONSTR OPS     13
SPACE STATION PROP XFER OPS      7
HLLV FLIGHTS      0
 FLEET TIME ON ORBIT =      86.0 DAYS
 TOTAL FLEET TIME =    1451.0 DAYS
 IDEAL MIN FLEET SIZE =      4.65 VEHICLES
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YEAR 2000

TMS MISSION SUMMARY

KEY	TITLE	CODE	TMS MISSION TYPE AUTO	MAN	RET/DEPLOY	SELF-PROP	NO. USES	PROP RQD
S001	EARTH OBSERV	SPCL						
S002	SYNTH APERTURE	SPCL						
S003	HETERODYNING	SPXX						
S004	UPPER ATMOS	SPCL						
OT03	SPACE STATION	SSSS						
OT04	HI-INCL STATION	SORS						
SP02	SPACE PHYSICS	SPCM						
SA01	VLBI/COSMIC	SPCL						
SL04	LIFESCIENCES	SPXX						
SL05	CENTRIFUGE	SSCL						
SL06	CLOSED ENV	SPCL						
CM01	MATLS SCIENCE	SPXX						
CM02	CRYSTAL GROWTH	PMCL		X			4.0	0.4
CM03	CRYSTAL GROWTH	PMXX		X			3.0	0.4
CM04	CRYSTAL GROWTH	PMCL		X			4.0	0.4
SA02	ASTRO TELESCOPE	SPXX						
SA04	ASTROPHYSICS	FMXM		X			1.0	0.4
CC03	INTELSAT-7,7A	FXCL						
CC04	MULTIBEAM COMM.	SSCM						
CC05	RECONFIGURABLE	FXCM						
CM05	CONT FLOW ELEC-	PMCL		X			0.0	0.4
CM06	CONTINUOUS FLOW	PMXL		X			4.0	0.4
CM07	GLASS PROC PLANT	SPCL						
CM08	GLASSPROC OPTICA	SPCL						
OT01	LOW INCL STA	SSSS						
OT02	LOW INCL STA	SORS						
OT05	HI-ALT STA	OMSB						

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 TM02 PRECISION OPT     SPCH

 TS02 TECH DEVEL        SSSA

 SA05 LARGE RADIO       FMCH        X                          1.0        0.4

  THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
 NOT MANIFESTED ON TRANSPORTATION

  THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
 NOT MANIFESTED ON TRANSPORTATION

  OT05 SPACE-BASED MANNED OTV
NOT MANIFESTED AS SHUTTLE PAYLOAD
PAYLOAD     6   HI-INCL STATION    RESUPPLY
NO OTV REQD
PAYLOAD     8   SPACE PHYSICS      PALLET
NO OTV REQD
PAYLOAD    10   RAD BIOLOGY        IN SM MAMMALS

  THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
 NOT MANIFESTED ON TRANSPORTATION
PAYLOAD    11   HUMAN LIFE SI      CARRY-ONS

  THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
 NOT MANIFESTED ON TRANSPORTATION
PAYLOAD    20   CRYSTAL GROWTH     RESUP-2
NO OTV REQD
PAYLOAD    26   INTELSAT-7,7A      CLASS COMSAT
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED:       14.170
PAYLOAD    28   RECONFIGURABLE     COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED:        9.315
PAYLOAD    29   CONT FLOW ELEC-    TROPH PLATFORM
NO OTV REQD
PAYLOAD    30   CONTINUOUS FLOW    ELECTRO RESUPP
NO OTV REQD
PAYLOAD    31   GLASS PROC PLANT
NO OTV REQD
PAYLOAD    32   GLASSPROC OPTICA LFIBERS RESUPP
NO OTV REQD
PAYLOAD    34   LOW INCL STA       RESUPPLY
NO OTV REQD
PAYLOAD    35   HI-ALT STA         RESUPPLY
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED:       21.497
PAYLOAD    42   PRECISION OPT      CONSTR & TEST
NO OTV REQD
PAYLOAD    46   LARGE RADIO        TELESCOPE
NO OTV REQD
SORTED H ARRAY
      INDEX      #FLTS       MASS     LENGTH     INCLIN
         30         17      25.00      12.00      29.00
         32          8      25.00      12.00      29.00
         31          1      15.00      10.00      29.00
         34          8      15.00       8.00      29.00
         46          1       5.00       7.00      29.00
          6          2       8.00       6.00      98.00
         26          1       5.00       6.00       0.00
```

29	1	7.00	6.00	29.00
8	1	10.00	5.00	98.00
42	1	5.00	5.00	29.00
28	4	1.80	4.40	0.00
20	5	12.50	4.00	29.00
301	2	3.00	3.00	29.00
302	2	4.00	1.50	29.00
300	1	1.50	1.10	29.00

MANIFESTING RECORD

NP	WT AV	LEN AV	*****MAIN P/L********* #	KEY	#FL	MASS	LEN	*****SEC P/L********* #	KEY	#FL	MASS	LEN	MC	MF	SF	DM RQ	DM OK	FLTS MAN	CG	FRE LEN	FRE MASS
1	27.6	10.1	30	CM06	17	25.0	12.0	32	CM08	8	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	17	25.0	12.0	31	CM07	1	15.0	10.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	17	25.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	17	25.0	12.0	46	SA05	1	5.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	17	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	17	25.0	12.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	17	25.0	12.0	29	CM05	1	7.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	17	25.0	12.0	8	SP02	1	10.0	5.0	4	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	17	25.0	12.0	42	TM02	1	5.0	5.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	17	25.0	12.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	17	25.0	12.0	20	CM04	5	12.5	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	17	25.0	12.0	301	TMS	2	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	17	25.0	12.0	302	TMS	2	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	17	25.0	12.0	300	TMS	1	1.5	1.1	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	8	25.0	12.0	31	CM07	1	15.0	10.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	8	25.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	8	25.0	12.0	46	SA05	1	5.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	8	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	8	25.0	12.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	8	25.0	12.0	29	CM05	1	7.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	8	25.0	12.0	8	SP02	1	10.0	5.0	4	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	8	25.0	12.0	42	TM02	1	5.0	5.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	8	25.0	12.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	8	25.0	12.0	20	CM04	5	12.5	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	8	25.0	12.0	301	TMS	2	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	8	25.0	12.0	302	TMS	2	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	8	25.0	12.0	300	TMS	1	1.5	1.1	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	46	SA05	1	5.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	29	CM05	1	7.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	8	SP02	1	10.0	5.0	4	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	42	TM02	1	5.0	5.0	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	20	CM04	5	12.5	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	301	TMS	2	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	302	TMS	2	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	300	TMS	1	1.5	1.1	5	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	46	SA05	1	5.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	29	CM05	1	7.0	6.0	5	1	1	*		--	--	--	--

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1	27.6	10.1	34	OT02	8	15.0	8.0	8	SP02	1	10.0	5.0	4	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	42	TM02	1	5.0	5.0	5	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	20	CM04	5	12.5	4.0	5	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	301	TMS	2	3.0	3.0	5	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	302	TMS	2	4.0	1.5	7	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	300	TMS	1	1.5	1.1	7	1	1	*	--	--	--	--
1	27.6	10.1	46	SA05	1	5.0	7.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--
1	27.6	10.1	46	SA05	1	5.0	7.0	26	CC03	1	5.0	6.0	5	1	1	*	--	--	--	--
1	27.6	10.1	46	SA05	1	5.0	7.0	29	CM05	1	7.0	6.0	5	1	1	*	--	--	--	--
1	27.6	10.1	46	SA05	1	5.0	7.0	8	SP02	1	10.0	5.0	4	1	1	*	--	--	--	--
1	27.6	10.1	46	SA05	1	5.0	7.0	42	TM02	1	5.0	5.0	5	1	1	*	--	--	--	--
1	27.6	10.1	46	SA05	1	5.0	7.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--
1	27.6	10.1	46	SA05	1	5.0	7.0	20	CM04	5	12.5	4.0	5	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											15.200										
1	27.6	10.1	46	SA05	0	5.0	7.0	301	TMS	1	3.0	3.0	8	1	1	*	1	27.0	0.1	1.8
1	27.6	10.1	46	SA05	0	5.0	7.0	302	TMS	2	4.0	1.5	1	1	1	*	--	--	--	--
1	27.6	10.1	46	SA05	0	5.0	7.0	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	26	CC03	1	5.0	6.0	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	29	CM05	1	7.0	6.0	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	8	SP02	1	10.0	5.0	6	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	42	TM02	1	5.0	5.0	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	28	CC05	4	1.8	4.4	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	20	CM04	5	12.5	4.0	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	301	TMS	1	3.0	3.0	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	302	TMS	2	4.0	1.5	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	300	TMS	1	1.5	1.1	4	0	0		--	--	--	--
1	27.6	10.1	26	CC03	1	5.0	6.0	29	CM05	1	7.0	6.0	5	1	1	*	--	--	--	--
1	27.6	10.1	26	CC03	1	5.0	6.0	8	SP02	1	10.0	5.0	4	1	1	*	--	--	--	--
1	27.6	10.1	26	CC03	1	5.0	6.0	42	TM02	1	5.0	5.0	5	1	1	*	--	--	--	--
1	27.6	10.1	26	CC03	1	5.0	6.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--
1	27.6	10.1	26	CC03	1	5.0	6.0	20	CM04	5	12.5	4.0	7	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											30.400										
1	27.6	10.1	26	CC03	0	5.0	6.0	301	TMS	0	3.0	3.0	8	1	1	*	1	27.1	1.1	1.8
1	27.6	10.1	26	CC03	0	5.0	6.0	302	TMS	2	4.0	1.5	1	1	1	*	--	--	--	--
1	27.6	10.1	26	CC03	0	5.0	6.0	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--
1	27.6	10.1	29	CM05	1	7.0	6.0	8	SP02	1	10.0	5.0	4	1	1	*	--	--	--	--
1	27.6	10.1	29	CM05	1	7.0	6.0	42	TM02	1	5.0	5.0	5	1	1	*	--	--	--	--
1	27.6	10.1	29	CM05	1	7.0	6.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--
1	27.6	10.1	29	CM05	1	7.0	6.0	20	CM04	5	12.5	4.0	7	1	1	*	--	--	--	--
1	27.6	10.1	29	CM05	1	7.0	6.0	301	TMS	0	3.0	3.0	1	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											45.600										
1	27.6	10.1	29	CM05	0	7.0	6.0	302	TMS	1	4.0	1.5	8	1	1	*	1	27.0	2.6	-1.2
1	27.6	10.1	29	CM05	0	7.0	6.0	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--
1	15.5	18.3	8	SP02	1	10.0	5.0	42	TM02	1	5.0	5.0	4	0	0		--	--	--	--
1	15.5	18.3	8	SP02	1	10.0	5.0	28	CC05	4	1.8	4.4	4	0	0		--	--	--	--
1	15.5	18.3	8	SP02	1	10.0	5.0	20	CM04	5	12.5	4.0	4	0	0		--	--	--	--
1	15.5	18.3	8	SP02	1	10.0	5.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
1	15.5	18.3	8	SP02	1	10.0	5.0	302	TMS	1	4.0	1.5	4	0	0		--	--	--	--
1	15.5	18.3	8	SP02	1	10.0	5.0	300	TMS	1	1.5	1.1	4	0	0		--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											60.800										
1	27.6	10.1	42	TM02	0	5.0	5.0	28	CC05	3	1.8	4.4	8	1	1	*	1	27.5	0.7	3.0
1	27.6	10.1	42	TM02	0	5.0	5.0	20	CM04	5	12.5	4.0	1	1	1	*	--	--	--	--
1	27.6	10.1	42	TM02	0	5.0	5.0	301	TMS	0	3.0	3.0	1	1	1	*	--	--	--	--
1	27.6	10.1	42	TM02	0	5.0	5.0	302	TMS	1	4.0	1.5	1	1	1	*	--	--	--	--
1	27.6	10.1	42	TM02	0	5.0	5.0	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											102.211										
1	27.6	10.1	28	CC05	0	1.8	4.4	20	CM04	2	12.5	4.0	8	1	1	*	3	26.8	1.7	-3.0
2	29.5	18.3	30	CM06	17	25.0	12.0	32	CM08	8	25.0	12.0	5	0	0		--	--	--	--
2	29.5	18.3	30	CM06	17	25.0	12.0	31	CM07	1	15.0	10.0	5	0	0		--	--	--	--

SP STA SYS OPS	6.441
EVA CRANE OP	5.040
EVA SERVICE TECH	5.040

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 5 IN MANDAYS/YR

STS OPERATIONS	3.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 6
NUMBER OF FLIGHTS: 2 PRIME MISSION: GLASSPROC OPTICA LFIBERS RESUPP OUTCOME # IS 0 KEY IS CM08
INCLINATION IS 29.00
CODE IS SPCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 2.958
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	6.441
EVA CRANE OP	5.040
EVA SERVICE TECH	5.040

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.070
TEST & C/O = 0.486
MODULE MATE = 0.152

ADJUSTED DUR FOR 2 FLIGHTS, AT SPACE STATION 4.049
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	1.761
S/C SYS - ELEC	1.340
S/C SYS - MECH	1.340

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2	29.5	18.3	30	CM06	17	25.0	12.0	34	OT02	8	15.0	8.0	5	0	0			--	--	--	--
2	29.5	18.3	30	CM06	17	25.0	12.0	46	SA05	0	5.0	7.0	1	0	0			--	--	--	--
2	29.5	18.3	30	CM06	17	25.0	12.0	6	OT04	2	8.0	6.0	4	0	0			--	--	--	--
2	29.5	18.3	30	CM06	17	25.0	12.0	26	CC03	0	5.0	6.0	1	0	0			--	--	--	--
2	29.5	18.3	30	CM06	17	25.0	12.0	29	CM05	0	7.0	6.0	1	0	0			--	--	--	--
2	29.5	18.3	30	CM06	17	25.0	12.0	8	SP02	1	10.0	5.0	4	0	0			--	--	--	--
2	29.5	18.3	30	CM06	17	25.0	12.0	42	TM02	0	5.0	5.0	1	0	0			--	--	--	--
2	29.5	18.3	30	CM06	17	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0			--	--	--	--
2	29.5	18.3	30	CM06	17	25.0	12.0	20	CM04	2	12.5	4.0	6	0	0			--	--	--	--
2	29.5	18.3	30	CM06	17	25.0	12.0	301	TMS	0	3.0	3.0	1	0	0			--	--	--	--
2	29.5	18.3	30	CM06	16	25.0	12.0	302	TMS	0	4.0	1.5	8	0	0			1	26.1	4.8	0.5
2	29.5	18.3	30	CM06	15	25.0	12.0	300	TMS	0	1.5	1.1	8	0	0			1	26.5	5.2	3.0
2	29.5	18.3	32	CM08	8	25.0	12.0	31	CM07	1	15.0	10.0	5	0	0			--	--	--	--
2	29.5	18.3	32	CM08	8	25.0	12.0	34	OT02	8	15.0	8.0	5	0	0			--	--	--	--
2	29.5	18.3	32	CM08	8	25.0	12.0	46	SA05	0	5.0	7.0	1	0	0			--	--	--	--
2	29.5	18.3	32	CM08	8	25.0	12.0	6	OT04	2	8.0	6.0	4	0	0			--	--	--	--
2	29.5	18.3	32	CM08	8	25.0	12.0	26	CC03	0	5.0	6.0	1	0	0			--	--	--	--
2	29.5	18.3	32	CM08	8	25.0	12.0	29	CM05	0	7.0	6.0	1	0	0			--	--	--	--
2	29.5	18.3	32	CM08	8	25.0	12.0	8	SP02	1	10.0	5.0	4	0	0			--	--	--	--
2	29.5	18.3	32	CM08	8	25.0	12.0	42	TM02	0	5.0	5.0	1	0	0			--	--	--	--
2	29.5	18.3	32	CM08	8	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0			--	--	--	--
2	29.5	18.3	32	CM08	8	25.0	12.0	20	CM04	2	12.5	4.0	6	0	0			--	--	--	--
2	29.5	18.3	32	CM08	8	25.0	12.0	301	TMS	0	3.0	3.0	1	0	0			--	--	--	--
2	29.5	18.3	32	CM08	8	25.0	12.0	302	TMS	0	4.0	1.5	1	0	0			--	--	--	--
2	29.5	18.3	32	CM08	8	25.0	12.0	300	TMS	0	1.5	1.1	1	0	0			--	--	--	--
2	29.5	18.3	31	CM07	1	15.0	10.0	34	OT02	8	15.0	8.0	6	0	0			--	--	--	--
2	29.5	18.3	31	CM07	1	15.0	10.0	46	SA05	0	5.0	7.0	1	0	0			--	--	--	--
2	29.5	18.3	31	CM07	1	15.0	10.0	6	OT04	2	8.0	6.0	4	0	0			--	--	--	--
2	29.5	18.3	31	CM07	1	15.0	10.0	26	CC03	0	5.0	6.0	1	0	0			--	--	--	--
2	29.5	18.3	31	CM07	1	15.0	10.0	29	CM05	0	7.0	6.0	1	0	0			--	--	--	--
2	29.5	18.3	31	CM07	1	15.0	10.0	8	SP02	1	10.0	5.0	4	0	0			--	--	--	--
2	29.5	18.3	31	CM07	1	15.0	10.0	42	TM02	0	5.0	5.0	1	0	0			--	--	--	--
2	29.5	18.3	31	CM07	1	15.0	10.0	28	CC05	0	1.8	4.4	1	0	0			--	--	--	--
DOCKING MODULE ADDED																						
2	29.5	18.3	31	CM07	0	15.0	10.0	20	CM04	1	12.5	4.0	8	0	0		*	1	26.9	2.2	0.1
2	29.5	18.3	31	CM07	0	15.0	10.0	301	TMS	0	3.0	3.0	1	0	0			--	--	--	--
2	29.5	18.3	31	CM07	0	15.0	10.0	302	TMS	0	4.0	1.5	1	0	0			--	--	--	--
2	29.5	18.3	31	CM07	0	15.0	10.0	300	TMS	0	1.5	1.1	1	0	0			--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	46	SA05	0	5.0	7.0	1	0	0	*		--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	6	OT04	2	8.0	6.0	4	0	0	*		--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	26	CC03	0	5.0	6.0	1	0	0	*		--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	29	CM05	0	7.0	6.0	1	0	0	*		--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	8	SP02	1	10.0	5.0	4	0	0	*		--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	42	TM02	0	5.0	5.0	1	0	0	*		--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	28	CC05	0	1.8	4.4	1	0	0	*		--	--	--	--
2	27.6	16.2	34	OT02	7	15.0	8.0	20	CM04	0	12.5	4.0	8	0	0	*		1	26.7	4.2	0.1
2	27.6	16.2	34	OT02	7	15.0	8.0	301	TMS	0	3.0	3.0	1	0	0	*		--	--	--	--
2	27.6	16.2	34	OT02	7	15.0	8.0	302	TMS	0	4.0	1.5	1	0	0	*		--	--	--	--
2	27.6	16.2	34	OT02	7	15.0	8.0	300	TMS	0	1.5	1.1	1	0	0	*		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	26	CC03	0	5.0	6.0	1	0	0			--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	29	CM05	0	7.0	6.0	1	0	0			--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	8	SP02	1	10.0	5.0	6	0	0			--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	42	TM02	0	5.0	5.0	1	0	0			--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	28	CC05	0	1.8	4.4	1	0	0			--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	20	CM04	0	12.5	4.0	1	0	0			--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	301	TMS	0	3.0	3.0	1	0	0			--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	302	TMS	0	4.0	1.5	1	0	0			--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	300	TMS	0	1.5	1.1	1	0	0			--	--	--	--
2	15.5	18.3	8	SP02	1	10.0	5.0	42	TM02	0	5.0	5.0	1	0	0			--	--	--	--

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2	15.5	18.3	8	SP02	1	10.0	5.0	28	CC05	0	1.8	4.4	1	0	0	--	--	--	--
2	15.5	18.3	8	SP02	1	10.0	5.0	20	CM04	0	12.5	4.0	1	0	0	--	--	--	--
2	15.5	18.3	8	SP02	1	10.0	5.0	301	TMS	0	3.0	3.0	1	0	0	--	--	--	--
2	15.5	18.3	8	SP02	1	10.0	5.0	302	TMS	0	4.0	1.5	1	0	0	--	--	--	--
2	15.5	18.3	8	SP02	1	10.0	5.0	300	TMS	0	1.5	1.1	1	0	0	--	--	--	--
2	29.5	18.3	30	CM06	0	25.0	12.0	--	--	--	--	--	8	0	0	15	27.1	6.3	-9.5
2	29.5	18.3	32	CM08	0	25.0	12.0	--	--	--	--	--	8	0	0	8	27.1	6.3	-9.5
2	29.5	18.3	34	OT02	0	15.0	8.0	--	--	--	--	--	8	0	0	7	26.0	10.3	0.5
2	15.5	18.3	6	OT04	0	8.0	6.0	--	--	--	--	--	8	0	0	2	23.5	12.3	7.5
2	15.5	18.3	8	SP02	0	10.0	5.0	--	--	--	--	--	8	0	0	1	24.6	13.3	5.5

PROPELLANT NEEDED THIS YEAR = 94.
PROPELLANT LEFT FROM PRIOR YEAR = 5.
PROPELLANT DELIVERED BY MINITANKER = 102.
PROPELLANT DELIVERED BY ET SCAVENGING = 0.

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MANI-FEST #	KEY REF	DESCRIPTION	MATCHED WITH	NO. FLTS	OTV USED	OTV EXP	P/L BAY LENGTH	LAUNCH MASS	TIME ON ORBIT	SP STA OPERATION
1	SA05	**LARGE RADIO TELESCOPE	TMS CAB DELIVERY	1	0	0	18.2	27.7	2.0	FS
2	CC03	**INTELSAT-7,7A CLASS COMSAT	TMS CAB DELIVERY	1	1	0	17.2	27.7	2.0	FS
3	CM05	**CONT FLOW ELEC TROPH PLATFOR	TMS PROP DELIV	1	0	0	15.7	30.7	2.0	FS
4	TM02	**PRECISION OPT CONSTR & TEST	RECONFIGURABLE COMM. SATELLITE	1	1	0	17.6	26.5	4.0	FS
5	CC05	**RECONFIGURABLE COMM. SATELLI	CRYSTAL GROWTH RESUP-2	3	1	0	16.6	32.5	4.0	FS
6	CM06	CONTINUOUS FLOW ELECTRO RESUPP	TMS PROP DELIV	1	0	0	13.5	29.0	2.0	FS
7	CM06	CONTINUOUS FLOW ELECTRO RESUPP	TMS DELIVERY	1	0	0	13.1	26.5	2.0	FS
8	CM07	GLASS PROC PLANT	CRYSTAL GROWTH RESUP-2	1	0	0	16.1	29.4	4.0	FS
9	OT02	LOW INCL STA RESUPPLY	CRYSTAL GROWTH RESUP-2	1	0	0	14.1	29.4	4.0	FS
10	CM06	CONTINUOUS FLOW ELECTRO RESUPP		15	0	0	12.0	25.0	2.0	C
11	CM08	GLASSPROC OPTICA LFIBERS RESUPP		8	0	0	12.0	25.0	2.0	C
12	OT02	LOW INCL STA RESUPPLY		7	0	0	8.0	15.0	2.0	C
13	OT04	HI-INCL STATION RESUPPLY		2	0	0	6.0	8.0	2.0	

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14	SP02 SPACE PHYSICS PALLET		1	0	0	5.0	10.0	2.0	C

** - MANIFESTED WITH MINITANKER

NO. OF SHUTTLE FLIGHTS 44
NO. OF TMS OPS 17
NO. OF MANNED TMS OPS 17
NO. OF SELF:PROP SAT SERV OPS 0
TMS & SATELLITE PROPELLANT USED 6.05
NO. OF OTV REUSE FLIGHTS 5
NO. OF OTVS EXPENDED 0
SPACE STATION FLT SERVICE OPS 11
SPACE STATION CONSTR OPS 18
SPACE STATION PROP XFER OPS 7
HLLV FLIGHTS 0
FLEET TIME ON ORBIT = 100.0 DAYS
TOTAL FLEET TIME = 1640.0 DAYS
IDEAL MIN FLEET SIZE = 5.26 VEHICLES

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YEAR 2001

TMS MISSION SUMMARY

KEY	TITLE	CODE	TMS MISSION TYPE AUTO	MAN	RET/DEPLOY	SELF-PROP	NO. USES	PROP RQD
S001	EARTH OBSERV	SPCL						
S002	SYNTH APERTURE	SPCL						
S003	HETERODYNING	SPXX						
S004	UPPER ATMOS	SPCL						
OT03	SPACE STATION	SSSS						
OT04	HI-INCL STATION	SORS						
SP02	SPACE PHYSICS	SPCM						
SA01	VLBI/COSMIC	SPCL						
SL04	LIFESCIENCES	SPXX						
SL05	CENTRIFUGE	SSCL						
SL06	CLOSED ENV	SPCL						
CM01	MATLS SCIENCE	SPXX						
CM02	CRYSTAL GROWTH	PMCL		X			4.0	0.4
CM03	CRYSTAL GROWTH	PMXX		X			3.0	0.4
CM04	CRYSTAL GROWTH	PMCL		X			4.0	0.4
SA02	ASTRO TELESCOPE	SPXX						
SA03	ASTROPHYSICS	FMXM		X			1.0	0.4
SA04	ASTROPHYSICS	FMXM		X			1.0	0.4
CC03	INTELSAT-7,7A	FXCL						
CC04	MULTIBEAM COMM.	SSCM						
CC05	RECONFIGURABLE	FXCM						
CM05	CONT FLOW ELEC-	PMCL		X			0.0	0.4
CM06	CONTINUOUS FLOW	PMXL		X			4.0	0.4
CM07	GLASS PROC PLANT	SPCL						
CM08	GLASSPROC OPTICA	SPCL						
OT01	LOW INCL STA	SSSS						
OT02	LOW INCL STA	SORS						

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OT05 HI-ALT STA OMSB

TS02 TECH DEVEL SSSA

SA05 LARGE RADIO FMCH X 1.0 0.4

OT05 SPACE-BASED MANNED OTV
NOT MANIFESTED AS SHUTTLE PAYLOAD
PAYLOAD 6 HI-INCL STATION RESUPPLY
NO OTV REQD
PAYLOAD 18 CRYSTAL GROWTH FACTORY/PLAT
NO OTV REQD
PAYLOAD 20 CRYSTAL GROWTH RESUP-2
NO OTV REQD
PAYLOAD 22 ASTROPHYSICS FREE-FLYER
NO OTV REQD
PAYLOAD 26 INTELSAT-7,7A CLASS COMSAT
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 14.170
PAYLOAD 27 MULTIBEAM COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 14.170
PAYLOAD 28 RECONFIGURABLE COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 9.315
PAYLOAD 30 CONTINUOUS FLOW ELECTRO RESUPP
NO OTV REQD
PAYLOAD 32 GLASSPROC OPTICA LFIBERS RESUPP
NO OTV REQD
PAYLOAD 34 LOW INCL STA RESUPPLY
NO OTV REQD
PAYLOAD 35 HI-ALT STA RESUPPLY
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 21.497
PAYLOAD 42 PRECISION OPT CONSTR & TEST
NO OTV REQD
SORTED H ARRAY

INDEX	#FLTS	MASS	LENGTH	INCLIN
22	1	17.00	12.00	29.00
30	20	25.00	12.00	29.00
32	10	25.00	12.00	29.00
27	1	5.00	8.00	0.00
34	8	15.00	8.00	29.00
18	1	10.00	7.00	29.00
6	2	8.00	6.00	98.00
26	1	5.00	6.00	0.00
42	-1	5.00	5.00	29.00
28	4	1.80	4.40	0.00
20	6	12.50	4.00	29.00
301	1	3.00	3.00	29.00
302	3	4.00	1.50	29.00
300	1	1.50	1.10	29.00

MANIFESTING RECORD

NP WT LEN *****MAIN P/L********* *****SEC P/L********* MC MF SF DM FLTS CG FRE FRE

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	AV	AV	#	KEY	#FL	MASS	LEN	#	KEY	#FL	MASS	LEN				RQ	OK	MAN		LEN	MASS
1	27.6	10.1	22	SA03	1	17.0	12.0	30	CM06	20	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	22	SA03	1	17.0	12.0	32	CM08	10	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	22	SA03	1	17.0	12.0	27	CC04	1	5.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	22	SA03	1	17.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	22	SA03	1	17.0	12.0	18	CM02	1	10.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	22	SA03	1	17.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	22	SA03	1	17.0	12.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	22	SA03	1	17.0	12.0	42	TM02	-1	5.0	5.0	1	1	1	*		--	--	--	--
1	27.6	10.1	22	SA03	1	17.0	12.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	22	SA03	1	17.0	12.0	20	CM04	6	12.5	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	22	SA03	1	17.0	12.0	301	TMS	1	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	22	SA03	1	17.0	12.0	302	TMS	3	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	22	SA03	1	17.0	12.0	300	TMS	1	1.5	1.1	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	32	CM08	10	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	27	CC04	1	5.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	18	CM02	1	10.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	42	TM02	-1	5.0	5.0	1	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	20	CM04	6	12.5	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	301	TMS	1	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	302	TMS	3	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	300	TMS	1	1.5	1.1	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	10	25.0	12.0	27	CC04	1	5.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	10	25.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	10	25.0	12.0	18	CM02	1	10.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	10	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	10	25.0	12.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	10	25.0	12.0	42	TM02	-1	5.0	5.0	1	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	10	25.0	12.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	10	25.0	12.0	20	CM04	6	12.5	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	10	25.0	12.0	301	TMS	1	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	10	25.0	12.0	302	TMS	3	4.0	1.5	5	1	1	*		--	--	--	--
1	27.6	10.1	32	CM08	10	25.0	12.0	300	TMS	1	1.5	1.1	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	18	CM02	1	10.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	42	TM02	-1	5.0	5.0	1	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	20	CM04	6	12.5	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	301	TMS	1	3.0	3.0	5	1	1	*		--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											15.200										
1	27.6	10.1	27	CC04	0	5.0	8.0	302	TMS	2	4.0	1.5	8	1	1	*		1	27.2	0.6	0.8
1	27.6	10.1	27	CC04	0	5.0	8.0	300	TMS	1	1.5	1.1	1	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	18	CM02	1	10.0	7.0	5	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	42	TM02	-1	5.0	5.0	1	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	20	CM04	6	12.5	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	301	TMS	1	3.0	3.0	5	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	302	TMS	2	4.0	1.5	7	1	1	*		--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	300	TMS	1	1.5	1.1	7	1	1	*		--	--	--	--
1	27.6	10.1	18	CM02	1	10.0	7.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	18	CM02	1	10.0	7.0	26	CC03	1	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	18	CM02	1	10.0	7.0	42	TM02	-1	5.0	5.0	1	1	1	*		--	--	--	--

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1	27.6	10.1	18	CM02	1	10.0	7.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--
1	27.6	10.1	18	CM02	1	10.0	7.0	20	CM04	6	12.5	4.0	5	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											30.239												
1	27.6	10.1	18	CM02	0	10.0	7.0	301	TMS	0	3.0	3.0	8	1	1	*	1	26.2	0.1	-3.0
1	27.6	10.1	18	CM02	0	10.0	7.0	302	TMS	2	4.0	1.5	1	1	1	*	--	--	--	--
1	27.6	10.1	18	CM02	0	10.0	7.0	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	26	CC03	1	5.0	6.0	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	42	TM02	-1	5.0	5.0	1	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	28	CC05	4	1.8	4.4	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	20	CM04	6	12.5	4.0	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	302	TMS	2	4.0	1.5	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	300	TMS	1	1.5	1.1	4	0	0		--	--	--	--
1	27.6	10.1	26	CC03	1	5.0	6.0	42	TM02	-1	5.0	5.0	1	1	1	*	--	--	--	--
1	27.6	10.1	26	CC03	1	5.0	6.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--
1	27.6	10.1	26	CC03	1	5.0	6.0	20	CM04	6	12.5	4.0	7	1	1	*	--	--	--	--
1	27.6	10.1	26	CC03	1	5.0	6.0	301	TMS	0	3.0	3.0	1	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											45.438												
1	27.6	10.1	26	CC03	0	5.0	6.0	302	TMS	1	4.0	1.5	8	1	1	*	1	27.4	2.6	0.8
1	27.6	10.1	26	CC03	0	5.0	6.0	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											100.653												
1	27.6	10.1	28	CC05	0	1.8	4.4	20	CM04	2	12.5	4.0	8	1	1	*	4	26.8	1.7	-3.0
2	29.5	18.3	22	SA03	1	17.0	12.0	30	CM06	20	25.0	12.0	5	0	0		--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	32	CM08	10	25.0	12.0	5	0	0		--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	27	CC04	0	5.0	8.0	1	0	0		--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	34	OT02	8	15.0	8.0	5	0	0		--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	18	CM02	0	10.0	7.0	1	0	0		--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	6	OT04	2	8.0	6.0	4	0	0		--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	42	TM02	-1	5.0	5.0	1	0	0		--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	20	CM04	2	12.5	4.0	6	0	0		--	--	--	--
2	29.5	18.3	22	SA03	1	17.0	12.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
DOCKING MODULE ADDED																							
2	29.5	18.3	22	SA03	0	17.0	12.0	302	TMS	0	4.0	1.5	8	0	0	*	1	26.4	2.7	6.6
2	29.5	18.3	22	SA03	0	17.0	12.0	300	TMS	1	1.5	1.1	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	32	CM08	10	25.0	12.0	5	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	27	CC04	0	5.0	8.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	34	OT02	8	15.0	8.0	5	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	18	CM02	0	10.0	7.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	6	OT04	2	8.0	6.0	4	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	42	TM02	-1	5.0	5.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	20	CM04	2	12.5	4.0	6	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	19	25.0	12.0	300	TMS	0	1.5	1.1	8	0	0		1	26.5	5.2	3.0
2	29.5	18.3	32	CM08	10	25.0	12.0	27	CC04	0	5.0	8.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	10	25.0	12.0	34	OT02	8	15.0	8.0	5	0	0		--	--	--	--
2	29.5	18.3	32	CM08	10	25.0	12.0	18	CM02	0	10.0	7.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	10	25.0	12.0	6	OT04	2	8.0	6.0	4	0	0		--	--	--	--
2	29.5	18.3	32	CM08	10	25.0	12.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	10	25.0	12.0	42	TM02	-1	5.0	5.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	10	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	10	25.0	12.0	20	CM04	2	12.5	4.0	6	0	0		--	--	--	--
2	29.5	18.3	32	CM08	10	25.0	12.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	10	25.0	12.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	10	25.0	12.0	300	TMS	0	1.5	1.1	1	0	0		--	--	--	--

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2	27.6	16.2	34	OT02	8	15.0	8.0	18	CM02	0	10.0	7.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	6	OT04	2	8.0	6.0	4	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	26	CC03	0	5.0	6.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	42	TM02	-1	5.0	5.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	28	CC05	0	1.8	4.4	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	6	15.0	8.0	20	CM04	0	12.5	4.0	8	0	0	*	2	26.7	4.2	0.1
2	27.6	16.2	34	OT02	6	15.0	8.0	301	TMS	0	3.0	3.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	6	15.0	8.0	302	TMS	0	4.0	1.5	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	6	15.0	8.0	300	TMS	0	1.5	1.1	1	0	0	*	--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	42	TM02	-1	5.0	5.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	20	CM04	0	12.5	4.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	300	TMS	0	1.5	1.1	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	0	25.0	12.0	--	--	--	--	--	8	0	0		19	27.1	6.3	-9.5
2	29.5	18.3	32	CM08	0	25.0	12.0	--	--	--	--	--	8	0	0		10	27.1	6.3	-9.5
2	29.5	18.3	34	OT02	0	15.0	8.0	--	--	--	--	--	8	0	0		6	26.0	10.3	0.5
2	15.5	18.3	6	OT04	0	8.0	6.0	--	--	--	--	--	8	0	0		2	23.5	12.3	7.5

PROPELLANT NEEDED THIS YEAR = 109.
PROPELLANT LEFT FROM PRIOR YEAR = 13.
PROPELLANT DELIVERED BY MINITANKER = 101.
PROPELLANT DELIVERED BY ET SCAVENGING = 0.

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MANI-FEST #	KEY REF	DESCRIPTION	MATCHED WITH	NO. FLTS	OTV USED	OTV EXP	P/L BAY LENGTH	LAUNCH MASS	TIME ON ORBIT	SP STA OPERATION
1	CC04	**MULTIBEAM COMM SATELLITE	TMS PROP DELIV	1	1	0	17.7	28.7	2.0	FS
2	CM02	**CRYSTAL GROWTH FACTORY/PLAT	TMS CAB DELIVERY	1	0	0	18.2	32.5	2.0	FS
3	CC03	**INTELSAT-7,7A CLASS COMSAT	TMS PROP DELIV	1	1	0	15.7	28.7	2.0	FS
4	CC05	**RECONFIGURABLE COMM. SATELLI	CRYSTAL GROWTH RESUP-2	4	1	0	16.6	32.5	4.0	FS
5	SA03	ASTROPHYSICS FREE-FLYER	TMS PROP DELIV	1	0	0	15.6	22.9	2.0	FS
6	CM06	CONTINUOUS FLOW ELECTRO RESUPP	TMS DELIVERY	1	0	0	13.1	26.5	2.0	FS
7	OT02	LOW INCL STA RESUPPLY	CRYSTAL GROWTH RESUP-2	2	0	0	14.1	29.4	4.0	FS
8	CM06	CONTINUOUS FLOW ELECTRO RESUPP		19	0	0	12.0	25.0	2.0	FS
9	CM08	GLASSPROC OPTICA LFIBERS RESUPP		10	0	0	12.0	25.0	2.0	C
10	OT02	LOW INCL STA RESUPPLY		6	0	0	8.0	15.0	2.0	C
11	OT04	HI-INCL STATION RESUPPLY		2	0	0	6.0	8.0	2.0	C

** - MANIFESTED WITH MINITANKER

NO. OF SHUTTLE FLIGHTS 48
NO. OF TMS OPS 18
NO. OF MANNED TMS OPS 18

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 NO. OF SELF:PROP SAT SERV OPS       0
 TMS & SATELLITE PROPELLANT USED          6.41
NO. OF OTv REUSE FLIGHTS      6
NO. OF OTVS EXPENDED      0
SPACE STATION FLT SERVICE OPS     11
SPACE STATION CONSTR OPS     19
SPACE STATION PROP XFER OPS      7
HLLV FLIGHTS      0
 FLEET TIME ON ORBIT =     108.0 DAYS
 TOTAL FLEET TIME =    1788.0 DAYS
 IDEAL MIN FLEET SIZE =      5.73 VEHICLES
```

YEAR 2002

TMS MISSION SUMMARY

KEY	TITLE	CODE	TMS MISSION TYPE AUTO	MAN	RET/DEPLOY	SELF-PROP	NO. USES	PROP RQD
S001	EARTH OBSERV	SPCL						
S002	SYNTH APERTURE	SPCL						
S003	HETERODYNING	SPXX						
S004	UPPER ATMOS	SPCL						
OT03	SPACE STATION	SSSS						
OT04	HI-INCL STATION	SORS						
SP02	SPACE PHYSICS	SPCM						
SA01	VLBI/COSMIC	SPCL						
SL04	LIFESCIENCES	SPXX						
SL05	CENTRIFUGE	SSCL						
SL06	CLOSED ENV	SPCL						
CM01	MATLS SCIENCE	SPXX						
CM02	CRYSTAL GROWTH	PMCL		X			4.0	0.4
CM03	CRYSTAL GROWTH	PMXX		X			3.0	0.4
CM04	CRYSTAL GROWTH	PMCL		X			4.0	0.4
SA02	ASTRO TELESCOPE	SPXX						
SA03	ASTROPHYSICS	FMXM		X			1.0	0.4
SA04	ASTROPHYSICS	FMXM		X			1.0	0.4
CC03	INTELSAT-7,7A	FXCL						
CC04	MULTIBEAM COMM.	SSCM						
CC05	RECONFIGURABLE	FXCM						
CM05	CONT FLOW ELEC-	PMCL		X			0.0	0.4
CM06	CONTINUOUS FLOW	PMXL		X			4.0	0.4
CM07	GLASS PROC PLANT	SPCL						
CM08	GLASSPROC OPTICA	SPCL						
OT01	LOW INCL STA	SSSS						
OT02	LOW INCL STA	SORS						

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OT05 HI-ALT STA        OMSB

TM03 PASSIVE MICW      SPCM

TS02 TECH DEVEL        SSSA

SA05 LARGE RADIO       FMCH        X.                          1.0        0.4

  OT05 SPACE-BASED MANNED OTV
NOT MANIFESTED AS SHUTTLE PAYLOAD
PAYLOAD    6   HI-INCL STATION    RESUPPLY
NO OTV REQD
PAYLOAD   20   CRYSTAL GROWTH     RESUP-2
NO OTV REQD
PAYLOAD   26   INTELSAT-7,7A      CLASS COMSAT
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED:      14.170
PAYLOAD   27   MULTIBEAM COMM.    SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED:      14.170
PAYLOAD   28   RECONFIGURABLE     COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED:       9.315
PAYLOAD   30   CONTINUOUS FLOW    ELECTRO RESUPP
NO OTV REQD
PAYLOAD   32   GLASSPROC OPTICA LFIBERS RESUPP
NO OTV REQD
PAYLOAD   34   LOW INCL STA       RESUPPLY
NO OTV REQD
PAYLOAD   35   HI-ALT STA         RESUPPLY
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED:      21.497
PAYLOAD   43   PASSIVE MICW       RADIOMETER
NO OTV REQD
SORTED H ARRAY
      INDEX      #FLTS       MASS     LENGTH     INCLIN
         43          1       3.00      13.50      29.00
         30         20      25.00      12.00      29.00
         32         12      25.00      12.00      29.00
         27          1       5.00       8.00       0.00
         34          8      15.00       8.00      29.00
          6          2       8.00       6.00      98.00
         26          1       5.00       6.00       0.00
         28          4       1.80       4.40       0.00
         20          6      12.50       4.00      29.00
        301          2       3.00       3.00      29.00
        302          2       4.00       1.50      29.00
        300          1       1.50       1.10      29.00
```

MANIFESTING RECORD

NP	WT AV	LEN AV	*****MAIN P/L******** #	KEY	#FL	MASS	LEN	*****SEC P/L******** #	KEY	#FL	MASS	LEN	MC	MF	SF	DM RQ	DM OK	FLTS MAN	CG	FRE LEN	FRE MASS
1	27.6	10.1	43	TM03	1	3.0	13.5	30	CM06	20	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	43	TM03	1	3.0	13.5	32	CM08	12	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	43	TM03	1	3.0	13.5	27	CC04	1	5.0	8.0	5	1	1	*		--	--	--	--

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1	27.6	10.1	43	TM03	1	3.0	13.5	34	OT02	8	15.0	8.0	5	1	1	*	--	--	--	--
1	27.6	10.1	43	TM03	1	3.0	13.5	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--
1	27.6	10.1	43	TM03	1	3.0	13.5	26	CC03	1	5.0	6.0	5	1	1	*	--	--	--	--
1	27.6	10.1	43	TM03	1	3.0	13.5	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--
1	27.6	10.1	43	TM03	1	3.0	13.5	20	CM04	6	12.5	4.0	5	1	1	*	--	--	--	--
1	27.6	10.1	43	TM03	1	3.0	13.5	301	TMS	2	3.0	3.0	5	1	1	*	--	--	--	--
1	27.6	10.1	43	TM03	1	3.0	13.5	302	TMS	2	4.0	1.5	5	1	1	*	--	--	--	--
1	27.6	10.1	43	TM03	1	3.0	13.5	300	TMS	1	1.5	1.1	5	1	1	*	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	32	CM08	12	25.0	12.0	5	1	1	*	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	27	CC04	1	5.0	8.0	5	1	1	*	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	26	CC03	1	5.0	6.0	5	1	1	*	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	20	CM04	6	12.5	4.0	5	1	1	*	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	301	TMS	2	3.0	3.0	5	1	1	*	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	302	TMS	2	4.0	1.5	5	1	1	*	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	300	TMS	1	1.5	1.1	5	1	1	*	--	--	--	--
1	27.6	10.1	32	CM08	12	25.0	12.0	27	CC04	1	5.0	8.0	5	1	1	*	--	--	--	--
1	27.6	10.1	32	CM08	12	25.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*	--	--	--	--
1	27.6	10.1	32	CM08	12	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--
1	27.6	10.1	32	CM08	12	25.0	12.0	26	CC03	1	5.0	6.0	5	1	1	*	--	--	--	--
1	27.6	10.1	32	CM08	12	25.0	12.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--
1	27.6	10.1	32	CM08	12	25.0	12.0	20	CM04	6	12.5	4.0	5	1	1	*	--	--	--	--
1	27.6	10.1	32	CM08	12	25.0	12.0	301	TMS	2	3.0	3.0	5	1	1	*	--	--	--	--
1	27.6	10.1	32	CM08	12	25.0	12.0	302	TMS	2	4.0	1.5	5	1	1	*	--	--	--	--
1	27.6	10.1	32	CM08	12	25.0	12.0	300	TMS	1	1.5	1.1	5	1	1	*	--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	34	OT02	8	15.0	8.0	5	1	1	*	--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	26	CC03	1	5.0	6.0	5	1	1	*	--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	20	CM04	6	12.5	4.0	5	1	1	*	--	--	--	--
1	27.6	10.1	27	CC04	1	5.0	8.0	301	TMS	2	3.0	3.0	5	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											15.200										
1	27.6	10.1	27	CC04	0	5.0	8.0	302	TMS	1	4.0	1.5	8	1	1	*	1	27.2	0.6	0.8
1	27.6	10.1	27	CC04	0	5.0	8.0	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	26	CC03	1	5.0	6.0	5	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	20	CM04	6	12.5	4.0	5	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	301	TMS	2	3.0	3.0	5	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	302	TMS	1	4.0	1.5	7	1	1	*	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	300	TMS	1	1.5	1.1	7	1	1	*	--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	26	CC03	1	5.0	6.0	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	28	CC05	4	1.8	4.4	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	20	CM04	6	12.5	4.0	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	301	TMS	2	3.0	3.0	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	302	TMS	1	4.0	1.5	4	0	0		--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	300	TMS	1	1.5	1.1	4	0	0		--	--	--	--
1	27.6	10.1	26	CC03	1	5.0	6.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--
1	27.6	10.1	26	CC03	1	5.0	6.0	20	CM04	6	12.5	4.0	7	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											30.400										
1	27.6	10.1	26	CC03	0	5.0	6.0	301	TMS	1	3.0	3.0	8	1	1	*	1	27.1	1.1	1.8
1	27.6	10.1	26	CC03	0	5.0	6.0	302	TMS	1	4.0	1.5	1	1	1	*	--	--	--	--
1	27.6	10.1	26	CC03	0	5.0	6.0	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											85.614										
1	27.6	10.1	28	CC05	0	1.8	4.4	20	CM04	2	12.5	4.0	8	1	1	*	4	26.8	1.7	-3.0
1	27.6	10.1	28	CC05	0	1.8	4.4	301	TMS	1	3.0	3.0	1	1	1	*	--	--	--	--
1	27.6	10.1	28	CC05	0	1.8	4.4	302	TMS	1	4.0	1.5	1	1	1	*	--	--	--	--
1	27.6	10.1	28	CC05	0	1.8	4.4	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--

```
PROPELLANT DELIVERED USING MINITANKER IS NOW       98.277
 1 27.6 10.1  20 CM04  1  12.5  4.0 301 TMS   0   3.0  3.0  8  1  1  *      1  26.4   3.1  -3.0
PROPELLANT DELIVERED USING MINITANKER IS NOW      109.991
 1 27.6 10.1  20 CM04  0  12.5  4.0 302 TMS   0   4.0  1.5  8  1  1  *      1  26.2   4.6  -3.0
 2 29.5 18.3  43 TM03  1   3.0 13.5  30 CM06 20  25.0 12.0  5  0  0         --  --    --   --
 2 29.5 18.3  43 TM03  1   3.0 13.5  32 CM08 12  25.0 12.0  5  0  0         --  --    --   --
 2 29.5 18.3  43 TM03  1   3.0 13.5  27 CC04  0   5.0  8.0  1  0  0         --  --    --   --
 2 29.5 18.3  43 TM03  1   3.0 13.5  34 OT02  8  15.0  8.0  5  0  0         --  --    --   --
 2 29.5 18.3  43 TM03  1   3.0 13.5   6 OT04  2   8.0  6.0  4  0  0         --  --    --   --
 2 29.5 18.3  43 TM03  1   3.0 13.5  26 CC03  0   5.0  6.0  1  0  0         --  --    --   --
 2 29.5 18.3  43 TM03  1   3.0 13.5  28 CC05  0   1.8  4.4  1  0  0         --  --    --   --
 2 29.5 18.3  43 TM03  1   3.0 13.5  20 CM04  0  12.5  4.0  1  0  0         --  --    --   --
 2 29.5 18.3  43 TM03  1   3.0 13.5 301 TMS   0   3.0  3.0  1  0  0         --  --    --   --
 2 29.5 18.3  43 TM03  1   3.0 13.5 302 TMS   0   4.0  1.5  1  0  0         --  --    --   --

DOCKING MODULE ADDED
 2 29.5 18.3  43 TM03  0   3.0 13.5 300 TMS   0   1.5  1.1  8  0  0      *  1  27.3   1.6  23.1
 2 29.5 18.3  30 CM06 20  25.0 12.0  32 CM08 12  25.0 12.0  5  0  0         --  --    --   --
 2 29.5 18.3  30 CM06 20  25.0 12.0  27 CC04  0   5.0  8.0  1  0  0         --  --    --   --
 2 29.5 18.3  30 CM06 20  25.0 12.0  34 OT02  8  15.0  8.0  5  0  0         --  --    --   --
 2 29.5 18.3  30 CM06 20  25.0 12.0   6 OT04  2   8.0  6.0  4  0  0         --  --    --   --
 2 29.5 18.3  30 CM06 20  25.0 12.0  26 CC03  0   5.0  6.0  1  0  0         --  --    --   --
 2 29.5 18.3  30 CM06 20  25.0 12.0  28 CC05  0   1.8  4.4  1  0  0         --  --    --   --
 2 29.5 18.3  30 CM06 20  25.0 12.0  20 CM04  0  12.5  4.0  1  0  0         --  --    --   --
 2 29.5 18.3  30 CM06 20  25.0 12.0 301 TMS   0   3.0  3.0  1  0  0         --  --    --   --
 2 29.5 18.3  30 CM06 20  25.0 12.0 302 TMS   0   4.0  1.5  1  0  0         --  --    --   --
 2 29.5 18.3  30 CM06 20  25.0 12.0 300 TMS   0   1.5  1.1  1  0  0         --  --    --   --
 2 29.5 18.3  32 CM08 12  25.0 12.0  27 CC04  0   5.0  8.0  1  0  0         --  --    --   --
 2 29.5 18.3  32 CM08 12  25.0 12.0  34 OT02  8  15.0  8.0  5  0  0         --  --    --   --
 2 29.5 18.3  32 CM08 12  25.0 12.0   6 OT04  2   8.0  6.0  4  0  0         --  --    --   --
 2 29.5 18.3  32 CM08 12  25.0 12.0  26 CC03  0   5.0  6.0  1  0  0         --  --    --   --
 2 29.5 18.3  32 CM08 12  25.0 12.0  28 CC05  0   1.8  4.4  1  0  0         --  --    --   --
 2 29.5 18.3  32 CM08 12  25.0 12.0  20 CM04  0  12.5  4.0  1  0  0         --  --    --   --
 2 29.5 18.3  32 CM08 12  25.0 12.0 301 TMS   0   3.0  3.0  1  0  0         --  --    --   --
 2 29.5 18.3  32 CM08 12  25.0 12.0 302 TMS   0   4.0  1.5  1  0  0         --  --    --   --
 2 29.5 18.3  32 CM08 12  25.0 12.0 300 TMS   0   1.5  1.1  1  0  0         --  --    --   --
 2 27.6 16.2  34 OT02  8  15.0  8.0   6 OT04  2   8.0  6.0  4  0  0  *      --  --    --   --
 2 27.6 16.2  34 OT02  8  15.0  8.0  26 CC03  0   5.0  6.0  1  0  0  **     --  --    --   --
 2 27.6 16.2  34 OT02  8  15.0  8.0  28 CC05  0   1.8  4.4  1  0  0  **     --  --    --   --
 2 27.6 16.2  34 OT02  8  15.0  8.0  20 CM04  0  12.5  4.0  1  0  0  **     --  --    --   --
 2 27.6 16.2  34 OT02  8  15.0  8.0 301 TMS   0   3.0  3.0  1  0  0  **     --  --    --   --
 2 27.6 16.2  34 OT02  8  15.0  8.0 302 TMS   0   4.0  1.5  1  0  0  **     --  --    --   --
 2 27.6 16.2  34 OT02  8  15.0  8.0 300 TMS   0   1.5  1.1  1  0  0  *      --  --    --   --
 2 15.5 18.3   6 OT04  2   8.0  6.0  26 CC03  0   5.0  6.0  1  0  0         --  --    --   --
 2 15.5 18.3   6 OT04  2   8.0  6.0  28 CC05  0   1.8  4.4  1  0  0         --  --    --   --
 2 15.5 18.3   6 OT04  2   8.0  6.0  20 CM04  0  12.5  4.0  1  0  0         --  --    --   --
 2 15.5 18.3   6 OT04  2   8.0  6.0 301 TMS   0   3.0  3.0  1  0  0         --  --    --   --
 2 15.5 18.3   6 OT04  2   8.0  6.0 302 TMS   0   4.0  1.5  1  0  0         --  --    --   --
 2 15.5 18.3   6 OT04  2   8.0  6.0 300 TMS   0   1.5  1.1  1  0  0         --  --    --   --
 2 29.5 18.3  30 CM06  0  25.0 12.0  --  --   --  --   --   8  0  0         20  27.1   6.3  -9.5
 2 29.5 18.3  32 CM08  0  25.0 12.0  --  --   --  --   --   8  0  0         12  27.1   6.3  -9.5
 2 29.5 18.3  34 OT02  0  15.0  8.0  --  --   --  --   --   8  0  0          8  26.0  10.3   0.5
 2 15.5 18.3   6 OT04  0   8.0  6.0  --  --   --  --   --   8  0  0          2  23.5  12.3   7.5

PROPELLANT NEEDED THIS YEAR =                  109.
PROPELLANT LEFT FROM PRIOR YEAR =                5.
PROPELLANT DELIVERED BY MINITANKER =           110.
PROPELLANT DELIVERED BY ET SCAVENGING =          0.
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MANI-FEST #	KEY REF	DESCRIPTION	MATCHED WITH	NO. FLTS	OTV USED	OTV EXP	P/L BAY LENGTH	LAUNCH MASS	TIME ON ORBIT	SP STA OPERATION
1	CC04	**MULTIBEAM COMM SATELLITE	TMS PROP DELIV	1	1	0	17.7	28.7	2.0	FS
2	CC03	**INTELSAT-7,7A CLASS COMSAT	TMS CAB DELIVERY	1	1	0	17.2	27.7	2.0	FS
3	CC05	**RECONFIGURABLE COMM. SATELLI	CRYSTAL GROWTH RESUP-2	4	1	0	16.6	32.5	4.0	FS
4	CM04	**CRYSTAL GROWTH RESUP-2	TMS CAB DELIVERY	1	0	0	15.2	32.5	2.0	FS
5	CM04	**CRYSTAL GROWTH RESUP-2	TMS PROP DELIV	1	0	0	13.7	32.5	2.0	FS
6	TM03	PASSIVE MICW RADIOMETER	TMS DELIVERY	1	0	0	16.7	6.3	2.0	FS
7	CM06	CONTINUOUS FLOW ELECTRO RESUPP		20	0	0	12.0	25.0	2.0	FS
8	CM08	GLASSPROC OPTICA LFIBERS RESUPP		12	0	0	12.0	25.0	2.0	C
9	OT02	LOW INCL STA RESUPPLY		8	0	0	8.0	15.0	2.0	C
10	OT04	HI-INCL STATION RESUPPLY		2	0	0	6.0	8.0	2.0	C

** - MANIFESTED WITH MINITANKER

NO. OF SHUTTLE FLIGHTS 51
NO. OF TMS OPS 18
NO. OF MANNED TMS OPS 18
NO. OF SELF:PROP SAT SERV OPS 0
TMS & SATELLITE PROPELLANT USED 6.41
NO. OF OTV REUSE FLIGHTS 6
NO. OF OTVS EXPENDED 0

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SPACE STATION FLT SERVICE OPS      9
SPACE STATION CONSTR OPS     21
SPACE STATION PROP XFER OPS      8
HLLV FLIGHTS      0
 FLEET TIME ON ORBIT =     110.0 DAYS
 TOTAL FLEET TIME =    1895.0 DAYS
 IDEAL MIN FLEET SIZE =      6.07 VEHICLES
```

YEAR 2003

TMS MISSION SUMMARY

KEY	TITLE	CODE	TMS MISSION TYPE AUTO	MAN	RET/DEPLOY	SELF-PROP	NO. USES	PROP RQD
S001	EARTH OBSERV	SPCL						
S002	SYNTH APERTURE	SPCL						
S003	HETERODYNING	SPXX						
S004	UPPER ATMOS	SPCL						
OT03	SPACE STATION	SSSS						
OT04	HI-INCL STATION	SORS						
SP02	SPACE PHYSICS	SPCM						
SA01	VLBI/COSMIC	SPCL						
SL08	RAD BIOLOGY	SSSA						
SL04	LIFESCIENCES	SPXX						
SL05	CENTRIFUGE	SSCL						
SL06	CLOSED ENV	SPCL						
CM01	MATLS SCIENCE	SPXX						
CM02	CRYSTAL GROWTH	PMCL		X			4.0	0.4
CM03	CRYSTAL GROWTH	PMXX		X			3.0	0.4
CM04	CRYSTAL GROWTH	PMCL		X			4.0	0.4
SA03	ASTROPHYSICS	FMXM		X			1.0	0.4
SA04	ASTROPHYSICS	FMXM		X			1.0	0.4
CC03	INTELSAT-7,7A	FXCL						
CC04	MULTIBEAM COMM.	SSCM						
CC05	RECONFIGURABLE	FXCM						
CM05	CONT FLOW ELEC-	PMCL		X			0.0	0.4
CM06	CONTINUOUS FLOW	PMXL		X			4.0	0.4
CM07	GLASS PROC PLANT	SPCL						
CM08	GLASSPROC OPTICA	SPCL						
OT01	LOW INCL STA	SSSS						
OT02	LOW INCL STA	SORS						

OT05 HI-ALT STA OMSB

TS02 TECH DEVEL SSSA

SA05 LARGE RADIO FMCH X 1.0 0.4

THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
NOT MANIFESTED ON TRANSPORTATION

OT05 SPACE-BASED MANNED OTV
NOT MANIFESTED AS SHUTTLE PAYLOAD
PAYLOAD 6 HI-INCL STATION RESUPPLY
NO OTV REQD
PAYLOAD 10 RAD BIOLOGY IN SM MAMMALS

THIS IS A SPACE STATION SPACE-AVAILABLE MISSION
NOT MANIFESTED ON TRANSPORTATION
PAYLOAD 18 CRYSTAL GROWTH FACTORY/PLAT
NO OTV REQD
PAYLOAD 20 CRYSTAL GROWTH RESUP-2
NO OTV REQD
PAYLOAD 21 ASTRO TELESCOPE CLUSTER
NO OTV REQD
PAYLOAD 26 INTELSAT-7,7A CLASS COMSAT
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 14.170
PAYLOAD 28 RECONFIGURABLE COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 9.315
PAYLOAD 30 CONTINUOUS FLOW ELECTRO RESUPP
NO OTV REQD
PAYLOAD 31 GLASS PROC PLANT
NO OTV REQD
PAYLOAD 32 GLASSPROC OPTICA LFIBERS RESUPP
NO OTV REQD
PAYLOAD 34 LOW INCL STA RESUPPLY
NO OTV REQD
PAYLOAD 35 HI-ALT STA RESUPPLY
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 21.497
PAYLOAD 43 PASSIVE MICW RADIOMETER
NO OTV REQD
SORTED H ARRAY

INDEX	#FLTS	MASS	LENGTH	INCLIN
43	-1	3.00	13.50	29.00
21	-1	20.00	12.00	29.00
30	20	25.00	12.00	29.00
32	15	25.00	12.00	29.00
31	1	15.00	10.00	29.00
34	8	15.00	8.00	29.00
18	1	10.00	7.00	29.00
6	2	8.00	6.00	98.00
26	2	5.00	6.00	0.00
28	4	1.80	4.40	0.00
20	6	12.50	4.00	29.00
301	2	3.00	3.00	29.00
302	3	4.00	1.50	29.00
300	1	1.50	1.10	29.00

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MANIFESTING RECORD

NP	WT AV	LEN AV	*****MAIN P/L******** #	KEY	#FL	MASS	LEN	*****SEC P/L******** #	KEY	#FL	MASS	LEN	MC	MF	SF	DM RQ	FLTS OK	FLTS MAN	CG	FRE LEN	FRE MASS
1	27.6	10.1	30	CM06	20	25.0	12.0	32	CM08	15	25.0	12.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	31	CM07	1	15.0	10.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	18	CM02	1	10.0	7.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	26	CC03	2	5.0	6.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	20	CM04	6	12.5	4.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	301	TMS	2	3.0	3.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	302	TMS	3	4.0	1.5	5	1	1	*	--	--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	300	TMS	1	1.5	1.1	5	1	1	*	--	--	--	--	--
1	27.6	10.1	32	CM08	15	25.0	12.0	31	CM07	1	15.0	10.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	32	CM08	15	25.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	32	CM08	15	25.0	12.0	18	CM02	1	10.0	7.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	32	CM08	15	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--	--
1	27.6	10.1	32	CM08	15	25.0	12.0	26	CC03	2	5.0	6.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	32	CM08	15	25.0	12.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--	--
1	27.6	10.1	32	CM08	15	25.0	12.0	20	CM04	6	12.5	4.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	32	CM08	15	25.0	12.0	301	TMS	2	3.0	3.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	32	CM08	15	25.0	12.0	302	TMS	3	4.0	1.5	5	1	1	*	--	--	--	--	--
1	27.6	10.1	32	CM08	15	25.0	12.0	300	TMS	1	1.5	1.1	5	1	1	*	--	--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	34	OT02	8	15.0	8.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	18	CM02	1	10.0	7.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	26	CC03	2	5.0	6.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	20	CM04	6	12.5	4.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	301	TMS	2	3.0	3.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	302	TMS	3	4.0	1.5	5	1	1	*	--	--	--	--	--
1	27.6	10.1	31	CM07	1	15.0	10.0	300	TMS	1	1.5	1.1	5	1	1	*	--	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	18	CM02	1	10.0	7.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	26	CC03	2	5.0	6.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	20	CM04	6	12.5	4.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	301	TMS	2	3.0	3.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	302	TMS	3	4.0	1.5	7	1	1	*	--	--	--	--	--
1	27.6	10.1	34	OT02	8	15.0	8.0	300	TMS	1	1.5	1.1	7	1	1	*	--	--	--	--	--
1	27.6	10.1	18	CM02	1	10.0	7.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--	--
1	27.6	10.1	18	CM02	1	10.0	7.0	26	CC03	2	5.0	6.0	5	1	1	*	--	--	--	--	--
1	27.6	10.1	18	CM02	1	10.0	7.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--	--
1	27.6	10.1	18	CM02	1	10.0	7.0	20	CM04	6	12.5	4.0	5	1	1	*	--	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW											15.038										
1	27.6	10.1	18	CM02	0	10.0	7.0	301	TMS	1	3.0	3.0	8	1	1	*	1		26.2	0.1	-3.0
1	27.6	10.1	18	CM02	0	10.0	7.0	302	TMS	3	4.0	1.5	1	1	1	*	--	--	--	--	--
1	27.6	10.1	18	CM02	0	10.0	7.0	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	26	CC03	2	5.0	6.0	4	0	0		--	--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	28	CC05	4	1.8	4.4	4	0	0		--	--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	20	CM04	6	12.5	4.0	4	0	0		--	--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	301	TMS	1	3.0	3.0	4	0	0		--	--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	302	TMS	3	4.0	1.5	4	0	0		--	--	--	--	--
1	15.5	18.3	6	OT04	2	8.0	6.0	300	TMS	1	1.5	1.1	4	0	0		--	--	--	--	--
1	27.6	10.1	26	CC03	2	5.0	6.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--	--
1	27.6	10.1	26	CC03	2	5.0	6.0	20	CM04	6	12.5	4.0	7	1	1	*	--	--	--	--	--

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PROPELLANT DELIVERED USING MINITANKER IS NOW												30.239														
1	27.6	10.1	26	CC03	1	5.0	6.0	301	TMS	0	3.0	3.0	8	1	1	*	1	27.1	1.1	1.8
PROPELLANT DELIVERED USING MINITANKER IS NOW												45.438														
1	27.6	10.1	26	CC03	0	5.0	6.0	302	TMS	2	4.0	1.5	8	1	1	*	1	27.4	2.6	0.8
1	27.6	10.1	26	CC03	0	5.0	6.0	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW												100.653														
1	27.6	10.1	28	CC05	0	1.8	4.4	20	CM04	2	12.5	4.0	8	1	1	*	4	26.8	1.7	-3.0
1	27.6	10.1	28	CC05	0	1.8	4.4	301	TMS	0	3.0	3.0	1	1	1	*	--	--	--	--
1	27.6	10.1	28	CC05	0	1.8	4.4	302	TMS	2	4.0	1.5	1	1	1	*	--	--	--	--
1	27.6	10.1	28	CC05	0	1.8	4.4	300	TMS	1	1.5	1.1	1	1	1	*	--	--	--	--
1	27.6	10.1	20	CM04	2	12.5	4.0	301	TMS	0	3.0	3.0	1	1	1	*	--	--	--	--
PROPELLANT DELIVERED USING MINITANKER IS NOW												124.080														
1	27.6	10.1	20	CM04	0	12.5	4.0	302	TMS	0	4.0	1.5	8	1	1	*	2	26.2	4.6	-3.0
2	29.5	18.3	30	CM06	20	25.0	12.0	32	CM08	15	25.0	12.0	5	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	31	CM07	1	15.0	10.0	5	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	34	OT02	8	15.0	8.0	5	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	18	CM02	0	10.0	7.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	6	OT04	2	8.0	6.0	4	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	20	CM04	0	12.5	4.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	19	25.0	12.0	300	TMS	0	1.5	1.1	8	0	0		1	26.5	5.2	3.0
2	29.5	18.3	32	CM08	15	25.0	12.0	31	CM07	1	15.0	10.0	5	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	34	OT02	8	15.0	8.0	5	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	18	CM02	0	10.0	7.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	6	OT04	2	8.0	6.0	4	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	20	CM04	0	12.5	4.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	300	TMS	0	1.5	1.1	1	0	0		--	--	--	--
2	29.5	18.3	31	CM07	1	15.0	10.0	34	OT02	8	15.0	8.0	6	0	0		--	--	--	--
2	29.5	18.3	31	CM07	1	15.0	10.0	18	CM02	0	10.0	7.0	1	0	0		--	--	--	--
2	29.5	18.3	31	CM07	1	15.0	10.0	6	OT04	2	8.0	6.0	4	0	0		--	--	--	--
2	29.5	18.3	31	CM07	1	15.0	10.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	29.5	18.3	31	CM07	1	15.0	10.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	29.5	18.3	31	CM07	1	15.0	10.0	20	CM04	0	12.5	4.0	1	0	0		--	--	--	--
2	29.5	18.3	31	CM07	1	15.0	10.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	29.5	18.3	31	CM07	1	15.0	10.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	29.5	18.3	31	CM07	1	15.0	10.0	300	TMS	0	1.5	1.1	1	0	0		--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	18	CM02	0	10.0	7.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	6	OT04	2	8.0	6.0	4	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	26	CC03	0	5.0	6.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	28	CC05	0	1.8	4.4	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	20	CM04	0	12.5	4.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	301	TMS	0	3.0	3.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	302	TMS	0	4.0	1.5	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	300	TMS	0	1.5	1.1	1	0	0	*	--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	20	CM04	0	12.5	4.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	300	TMS	0	1.5	1.1	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	0	25.0	12.0	--	--	--	--	--	8	0	0		19	27.1	6.3	-9.5
2	29.5	18.3	32	CM08	0	25.0	12.0	--	--	--	--	--	8	0	0		15	27.1	6.3	-9.5
2	29.5	18.3	31	CM07	0	15.0	10.0	--	--	--	--	--	8	0	0		1	26.0	8.3	0.5

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2	29.5	18.3	34	OT02	0	15.0	8.0	--	--	--	--	--	8	0	0	8	26.0	10.3	0.5
2	15.5	18.3	6	OT04	0	8.0	6.0	--	--	--	--	--	8	0	0	2	23.5	12.3	7.5

PROPELLANT NEEDED THIS YEAR = 109.
PROPELLANT LEFT FROM PRIOR YEAR = 6.
PROPELLANT DELIVERED BY MINITANKER = 124.
PROPELLANT DELIVERED BY ET SCAVENGING = 0.

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MANI-FEST #	KEY REF	DESCRIPTION	MATCHED WITH	NO. FLTS	OTV USED	OTV EXP	P/L BAY LENGTH	LAUNCH MASS	TIME ON ORBIT	SP STA OPERATION
1	CM02	**CRYSTAL GROWTH FACTORY/PLAT	TMS CAB DELIVERY	1	0	0	18.2	32.5	2.0	FS
2	CC03	**INTELSAT-7,7A CLASS COMSAT	TMS CAB DELIVERY	1	1	0	17.2	27.7	2.0	FS
3	CC03	**INTELSAT-7,7A CLASS COMSAT	TMS PROP DELIV	1	1	0	15.7	28.7	2.0	FS
4	CC05	**RECONFIGURABLE COMM. SATELLI	CRYSTAL GROWTH RESUP-2	4	1	0	16.6	32.5	4.0	FS
5	CM04	**CRYSTAL GROWTH RESUP-2	TMS PROP DELIV	2	0	0	13.7	32.5	2.0	FS
6	CM06	CONTINUOUS FLOW ELECTRO RESUPP	TMS DELIVERY	1	0	0	13.1	26.5	2.0	FS
7	CM06	CONTINUOUS FLOW ELECTRO RESUPP		19	0	0	12.0	25.0	2.0	FS
8	CM08	GLASSPROC OPTICA LFIBERS RESUPP		15	0	0	12.0	25.0	2.0	C
9	CM07	GLASS PROC PLANT		1	0	0	10.0	15.0	2.0	C
10	OT02	LOW INCL STA RESUPPLY		8	0	0	8.0	15.0	2.0	C
11	OT04	HI-INCL STATION RESUPPLY		2	0	0	6.0	8.0	2.0	C

** - MANIFESTED WITH MINITANKER

NO. OF SHUTTLE FLIGHTS 55
NO. OF TMS OPS 18
NO. OF MANNED TMS OPS 18

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 NO. OF SELF:PROP SAT SERV OPS       0
 TMS & SATELLITE PROPELLANT USED          6.41
NO. OF OTV REUSE FLIGHTS      6
NO. OF OTVS EXPENDED      0
SPACE STATION FLT SERVICE OPS     10
SPACE STATION CONSTR OPS     25
SPACE STATION PROP XFER OPS      9
HLLV FLIGHTS      0
 FLEET TIME ON ORBIT =     118.0 DAYS
 TOTAL FLEET TIME =    2043.0 DAYS
 IDEAL MIN FLEET SIZE =      6.55 VEHICLES
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YEAR 2004

TMS MISSION SUMMARY

KEY	TITLE	CODE	TMS MISSION TYPE AUTO	MAN	RET/DEPLOY	SELF-PROP	NO. USES	PROP RQD
S001	EARTH OBSERV	SPCL						
S002	SYNTH APERTURE	SPCL						
S003	HETERODYNING	SPXX						
S004	UPPER ATMOS	SPCL						
OT03	SPACE STATION	SSSS						
OT04	HI-INCL STATION	SORS						
SP02	SPACE PHYSICS	SPCM						
SA01	VLBI/COSMIC	SPCL						
SL08	RAD BIOLOGY	SSSA						
SL04	LIFESCIENCES	SPXX						
SL05	CENTRIFUGE	SSCL						
SL06	CLOSED ENV	SPCL						
CM01	MATLS SCIENCE	SPXX						
CM02	CRYSTAL GROWTH	PMCL		X			4.0	0.4
CM03	CRYSTAL GROWTH	PMXX		X			3.0	0.4
CM04	CRYSTAL GROWTH	PMCL		X			4.0	0.4
SA03	ASTROPHYSICS	FMXM		X			1.0	0.4
SA04	ASTROPHYSICS	FMXM		X			1.0	0.4
CC03	INTELSAT-7,7A	FXCL						
CC04	MULTIBEAM COMM.	SSCM						
CC05	RECONFIGURABLE	FXCM						
CM05	CONT FLOW ELEC-	PMCL		X			0.0	0.4
CM06	CONTINUOUS FLOW	PMXL		X			4.0	0.4
CM07	GLASS PROC PLANT	SPCL						
CM08	GLASSPROC OPTICA	SPCL						
OT01	LOW INCL STA	SSSS						
OT02	LOW INCL STA	SORS						

OT05 HI-ALT STA OMSB

TS02 TECH DEVEL SSSA

SA05 LARGE RADIO FMCH X 1.0 0.4

OT05 SPACE-BASED MANNED OTV
NOT MANIFESTED AS SHUTTLE PAYLOAD
PAYLOAD 6 HI-INCL STATION RESUPPLY
NO OTV REQD
PAYLOAD 20 CRYSTAL GROWTH RESUP-2
NO OTV REQD
PAYLOAD 26 INTELSAT-7,7A CLASS COMSAT
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 14.170
PAYLOAD 27 MULTIBEAM COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 14.170
PAYLOAD 28 RECONFIGURABLE COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 9.315
PAYLOAD 30 CONTINUOUS FLOW ELECTRO RESUPP
NO OTV REQD
PAYLOAD 32 GLASSPROC OPTICA LFIBERS RESUPP
NO OTV REQD
PAYLOAD 34 LOW INCL STA RESUPPLY
NO OTV REQD
PAYLOAD 35 HI-ALT STA RESUPPLY
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 21.497
SORTED H ARRAY

INDEX	#FLTS	MASS	LENGTH	INCLIN
30	20	25.00	12.00	29.00
32	15	25.00	12.00	29.00
27	1	5.00	8.00	0.00
34	8	15.00	8.00	29.00
6	2	8.00	6.00	98.00
26	2	5.00	6.00	0.00
28	4	1.80	4.40	0.00
20	6	12.50	4.00	29.00
301	2	3.00	3.00	29.00
302	2	4.00	1.50	29.00
300	1	1.50	1.10	29.00

MANIFESTING RECORD

NP	WT AV	LEN AV	*****MAIN P/L******** #	KEY	#FL	MASS	LEN	*****SEC P/L******** #	KEY	#FL	MASS	LEN	MC	MF	SF	DM RQ	DM OK	FLTS MAN	CG	FRE LEN	FRE MASS
1	27.6	10.1	30	CM06	20	25.0	12.0	32	CM08	15	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	27	CC04	1	5.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	26	CC03	2	5.0	6.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	28	CC05	4	1.8	4.4	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	20	CM04	6	12.5	4.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	301	TMS	2	3.0	3.0	5	1	1	*		--	--	--	--

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 1 27.6 10.1  30 CM06 20  25.0 12.0 302 TMS   2   4.0  1.5  5  1  1  *      --   --   --   --
 1 27.6 10.1  30 CM06 20  25.0 12.0 300 TMS   1   1.5  1.1  5  1  1  *      --   --   --   --
 1 27.6 10.1  32 CM08 15  25.0 12.0  27 CC04  1   5.0  8.0  5  1  1  *      --   --   --   --
 1 27.6 10.1  32 CM08 15  25.0 12.0  34 OT02  8  15.0  8.0  5  1  1  *      --   --   --   --
 1 27.6 10.1  32 CM08 15  25.0 12.0   6 OT04  2   8.0  6.0  4  1  1  *      --   --   --   --
 1 27.6 10.1  32 CM08 15  25.0 12.0  26 CC03  2   5.0  6.0  5  1  1  *      --   --   --   --
 1 27.6 10.1  32 CM08 15  25.0 12.0  28 CC05  4   1.8  4.4  5  1  1  *      --   --   --   --
 1 27.6 10.1  32 CM08 15  25.0 12.0  20 CM04  6  12.5  4.0  5  1  1  *      --   --   --   --
 1 27.6 10.1  32 CM08 15  25.0 12.0 301 TMS   2   3.0  3.0  5  1  1  *      --   --   --   --
 1 27.6 10.1  32 CM08 15  25.0 12.0 302 TMS   2   4.0  1.5  5  1  1  *      --   --   --   --
 1 27.6 10.1  32 CM08 15  25.0 12.0 300 TMS   1   1.5  1.1  5  1  1  *      --   --   --   --
 1 27.6 10.1  27 CC04  1   5.0  8.0  34 OT02  8  15.0  8.0  5  1  1  *      --   --   --   --
 1 27.6 10.1  27 CC04  1   5.0  8.0   6 OT04  2   8.0  6.0  4  1  1  *      --   --   --   --
 1 27.6 10.1  27 CC04  1   5.0  8.0  26 CC03  2   5.0  6.0  5  1  1  *      --   --   --   --
 1 27.6 10.1  27 CC04  1   5.0  8.0  28 CC05  4   1.8  4.4  5  1  1  *      --   --   --   --
 1 27.6 10.1  27 CC04  1   5.0  8.0  20 CM04  6  12.5  4.0  5  1  1  *      --   --   --   --
 1 27.6 10.1  27 CC04  1   5.0  8.0 301 TMS   2   3.0  3.0  5  1  1  *      --   --   --   --
PROPELLANT DELIVERED USING MINITANKER IS NOW      15.200
 1 27.6 10.1  27 CC04  0   5.0  8.0 302 TMS   1   4.0  1.5  8  1  1  *       1  27.2   0.6   0.8
 1 27.6 10.1  27 CC04  0   5.0  8.0 300 TMS   1   1.5  1.1  1  1  1  *      --   --   --   --
 1 27.6 10.1  34 OT02  8  15.0  8.0   6 OT04  2   8.0  6.0  4  1  1  *      --   --   --   --
 1 27.6 10.1  34 OT02  8  15.0  8.0  26 CC03  2   5.0  6.0  5  1  1  *      --   --   --   --
 1 27.6 10.1  34 OT02  8  15.0  8.0  28 CC05  4   1.8  4.4  5  1  1  *      --   --   --   --
 1 27.6 10.1  34 OT02  8  15.0  8.0  20 CM04  6  12.5  4.0  5  1  1  *      --   --   --   --
 1 27.6 10.1  34 OT02  8  15.0  8.0 301 TMS   2   3.0  3.0  5  1  1  *      --   --   --   --
 1 27.6 10.1  34 OT02  8  15.0  8.0 302 TMS   1   4.0  1.5  7  1  1  *      --   --   --   --
 1 27.6 10.1  34 OT02  8  15.0  8.0 300 TMS   1   1.5  1.1  7  1  1  *      --   --   --   --
 1 15.5 18.3   6 OT04  2   8.0  6.0  26 CC03  2   5.0  6.0  4  0  0         --   --   --   --
 1 15.5 18.3   6 OT04  2   8.0  6.0  28 CC05  4   1.8  4.4  4  0  0         --   --   --   --
 1 15.5 18.3   6 OT04  2   8.0  6.0  20 CM04  6  12.5  4.0  4  0  0         --   --   --   --
 1 15.5 18.3   6 OT04  2   8.0  6.0 301 TMS   2   3.0  3.0  4  0  0         --   --   --   --
 1 15.5 18.3   6 OT04  2   8.0  6.0 302 TMS   1   4.0  1.5  4  0  0         --   --   --   --
 1 15.5 18.3   6 OT04  2   8.0  6.0 300 TMS   1   1.5  1.1  4  0  0         --   --   --   --
 1 27.6 10.1  26 CC03  2   5.0  6.0  28 CC05  4   1.8  4.4  5  1  1  *      --   --   --   --
 1 27.6 10.1  26 CC03  2   5.0  6.0  20 CM04  6  12.5  4.0  7  1  1  *      --   --   --   --
PROPELLANT DELIVERED USING MINITANKER IS NOW      45.600
 1 27.6 10.1  26 CC03  0   5.0  6.0 301 TMS   0   3.0  3.0  8  1  1  *       2  27.1   1.1   1.8
 1 27.6 10.1  26 CC03  0   5.0  6.0 302 TMS   1   4.0  1.5  1  1  1  *      --   --   --   --
 1 27.6 10.1  26 CC03  0   5.0  6.0 300 TMS   1   1.5  1.1  1  1  1  *      --   --   --   --
PROPELLANT DELIVERED USING MINITANKER IS NOW     100.814
 1 27.6 10.1  28 CC05  0   1.8  4.4  20 CM04  2  12.5  4.0  8  1  1  *       4  26.8   1.7  -3.0
 1 27.6 10.1  28 CC05  0   1.8  4.4 301 TMS   0   3.0  3.0  1  1  1  *      --   --   --   --
 1 27.6 10.1  28 CC05  0   1.8  4.4 302 TMS   1   4.0  1.5  1  1  1  *      --   --   --   --
 1 27.6 10.1  28 CC05  0   1.8  4.4 300 TMS   1   1.5  1.1  1  1  1  *      --   --   --   --
 1 27.6 10.1  20 CM04  2  12.5  4.0 301 TMS   0   3.0  3.0  1  1  1  *      --   --   --   --
PROPELLANT DELIVERED USING MINITANKER IS NOW     112.528
 1 27.6 10.1  20 CM04  1  12.5  4.0 302 TMS   0   4.0  1.5  8  1  1  *       1  26.2   4.6  -3.0
 2 29.5 18.3  30 CM06 20  25.0 12.0  32 CM08 15  25.0 12.0  5  0  0         --   --   --   --
 2 29.5 18.3  30 CM06 20  25.0 12.0  27 CC04  0   5.0  8.0  1  0  0         --   --   --   --
 2 29.5 18.3  30 CM06 20  25.0 12.0  34 OT02  8  15.0  8.0  5  0  0         --   --   --   --
 2 29.5 18.3  30 CM06 20  25.0 12.0   6 OT04  2   8.0  6.0  4  0  0         --   --   --   --
 2 29.5 18.3  30 CM06 20  25.0 12.0  26 CC03  0   5.0  6.0  1  0  0         --   --   --   --
 2 29.5 18.3  30 CM06 20  25.0 12.0  28 CC05  0   1.8  4.4  1  0  0         --   --   --   --
 2 29.5 18.3  30 CM06 20  25.0 12.0  20 CM04  1  12.5  4.0  6  0  0         --   --   --   --
 2 29.5 18.3  30 CM06 20  25.0 12.0 301 TMS   0   3.0  3.0  1  0  0         --   --   --   --
 2 29.5 18.3  30 CM06 20  25.0 12.0 302 TMS   0   4.0  1.5  1  0  0         --   --   --   --
 2 29.5 18.3  30 CM06 19  25.0 12.0 300 TMS   0   1.5  1.1  8  0  0         --   --   --   --
 2 29.5 18.3  32 CM08 15  25.0 12.0  27 CC04  0   5.0  8.0  1  0  0          1  26.5   5.2   3.0
 2 29.5 18.3  32 CM08 15  25.0 12.0  34 OT02  8  15.0  8.0  5  0  0         --   --   --   --
 2 29.5 18.3  32 CM08 15  25.0 12.0   6 OT04  2   8.0  6.0  4  0  0         --   --   --   --
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2	29.5	18.3	32	CM08	15	25.0	12.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	20	CM04	1	12.5	4.0	6	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	300	TMS	0	1.5	1.1	1	0	0		--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	6	OT04	2	8.0	6.0	4	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	26	CC03	0	5.0	6.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	8	15.0	8.0	28	CC05	0	1.8	4.4	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	7	15.0	8.0	20	CM04	0	12.5	4.0	8	0	0	*	1	26.7	4.2	0.1
2	27.6	16.2	34	OT02	7	15.0	8.0	301	TMS	0	3.0	3.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	7	15.0	8.0	302	TMS	0	4.0	1.5	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	7	15.0	8.0	300	TMS	0	1.5	1.1	1	0	0	*	--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	20	CM04	0	12.5	4.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	300	TMS	0	1.5	1.1	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	0	25.0	12.0	--	--	--	--	--	8	0	0		19	27.1	6.3	-9.5
2	29.5	18.3	32	CM08	0	25.0	12.0	--	--	--	--	--	8	0	0		15	27.1	6.3	-9.5
2	29.5	18.3	34	OT02	0	15.0	8.0	--	--	--	--	--	8	0	0		7	26.0	10.3	0.5
2	15.5	18.3	6	OT04	0	8.0	6.0	--	--	--	--	--	8	0	0		2	23.5	12.3	7.5

PROPELLANT NEEDED THIS YEAR = 123.
PROPELLANT LEFT FROM PRIOR YEAR = 22.
PROPELLANT DELIVERED BY MINITANKER = 113.
PROPELLANT DELIVERED BY ET SCAVENGING = 0.

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MANI-FEST #	KEY REF	DESCRIPTION	MATCHED WITH	NO. FLTS	OTV USED	OTV EXP	P/L BAY LENGTH	LAUNCH MASS	TIME ON ORBIT	SP STA OPERATION
1	CC04	**MULTIBEAM COMM SATELLITE	TMS PROP DELIV	1	1	0	17.7	28.7	2.0	FS
2	CC03	**INTELSAT-7,7A CLASS COMSAT	TMS CAB DELIVERY	2	1	0	17.2	27.7	2.0	FS
3	CC05	**RECONFIGURABLE COMM. SATELLI	CRYSTAL GROWTH RESUP-2	4	1	0	16.6	32.5	4.0	FS
4	CM04	**CRYSTAL GROWTH RESUP-2	TMS PROP DELIV	1	0	0	13.7	32.5	2.0	FS
5	CM06	CONTINUOUS FLOW ELECTRO RESUPP	TMS DELIVERY	1	0	0	13.1	26.5	2.0	FS
6	OT02	LOW INCL STA RESUPPLY	CRYSTAL GROWTH RESUP-2	1	0	0	14.1	29.4	4.0	FS
7	CM06	CONTINUOUS FLOW ELECTRO RESUPP		19	0	0	12.0	25.0	2.0	FS
8	CM08	GLASSPROC OPTICA LFIBERS RESUPP		15	0	0	12.0	25.0	2.0	C
9	OT02	LOW INCL STA RESUPPLY		7	0	0	8.0	15.0	2.0	C
10	OT04	HI-INCL STATION RESUPPLY		2	0	0	6.0	8.0	2.0	C

** - MANIFESTED WITH MINITANKER

NO. OF SHUTTLE FLIGHTS 53
NO. OF TMS OPS 18
NO. OF MANNED TMS OPS 18
NO. OF SELF:PROP SAT SERV OPS 0
TMS & SATELLITE PROPELLANT USED 6.41
NO. OF OTV REUSE FLIGHTS 7
NO. OF OTVS EXPENDED 0

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SPACE STATION FLT SERVICE OPS     10
SPACE STATION CONSTR OPS     24
SPACE STATION PROP XFER OPS      8
HLLV FLIGHTS      0
 FLEET TIME ON ORBIT =     116.0 DAYS
 TOTAL FLEET TIME =    1971.0 DAYS
 IDEAL MIN FLEET SIZE =      6.32 VEHICLES
```

YEAR 2005

TMS MISSION SUMMARY

KEY	TITLE	CODE	TMS MISSION TYPE AUTO	MAN	RET/DEPLOY	SELF-PROP	NO. USES	PROP RQD
S001	EARTH OBSERV	SPCL						
S002	SYNTH APERTURE	SPCL						
S003	HETERODYNING	SPXX						
S004	UPPER ATMOS	SPCL						
OT03	SPACE STATION	SSSS						
OT04	HI-INCL STATION	SORS						
SP02	SPACE PHYSICS	SPCM						
SA01	VLBI/COSMIC	SPCL						
SL08	RAD BIOLOGY	SSSA						
SL04	LIFESCIENCES	SPXX						
SL05	CENTRIFUGE	SSCL						
SL06	CLOSED ENV	SPCL						
CM01	MATLS SCIENCE	SPXX						
CM02	CRYSTAL GROWTH	PMCL		X			4.0	0.4
CM03	CRYSTAL GROWTH	PMXX		X			3.0	0.4
CM04	CRYSTAL GROWTH	PMCL		X			4.0	0.4
SA03	ASTROPHYSICS	FMXM		X			1.0	0.4
SA04	ASTROPHYSICS	FMXM		X			1.0	0.4
CC03	INTELSAT-7,7A	FXCL						
CC04	MULTIBEAM COMM.	SSCM						
CC05	RECONFIGURABLE	FXCM						
CM05	CONT FLOW ELEC-	PMCL		X			0.0	0.4
CM06	CONTINUOUS FLOW	PMXL		X			4.0	0.4
CM07	GLASS PROC PLANT	SPCL						
CM08	GLASSPROC OPTICA	SPCL						
OT01	LOW INCL STA	SSSS						
OT02	LOW INCL STA	SORS						

OT05 HI-ALT STA OMSB

TE02 LIQ DROPLET SPCL

TS02 TECH DEVEL SSSA

SA05 LARGE RADIO FMCH X 1.0 0.4

OT05 SPACE-BASED MANNED OTV
NOT MANIFESTED AS SHUTTLE PAYLOAD
PAYLOAD 6 HI-INCL STATION RESUPPLY
NO OTV REQD
PAYLOAD 20 CRYSTAL GROWTH RESUP-2
NO OTV REQD
PAYLOAD 26 INTELSAT-7,7A CLASS COMSAT
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 14.170
PAYLOAD 27 MULTIBEAM COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 14.170
PAYLOAD 28 RECONFIGURABLE COMM. SATELLITE
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 9.315
PAYLOAD 30 CONTINUOUS FLOW ELECTRO RESUPP
NO OTV REQD
PAYLOAD 32 GLASSPROC OPTICA LFIBERS RESUPP
NO OTV REQD
PAYLOAD 34 LOW INCL STA RESUPPLY
NO OTV REQD
PAYLOAD 35 HI-ALT STA RESUPPLY
OUTCOME #1 - SPACE-BASED OTV REUSED
PROPELLANT USED: 21.497
PAYLOAD 44 LIQ DROPLET RADIATOR
NO OTV REQD
SORTED H ARRAY

INDEX	#FLTS	MASS	LENGTH	INCLIN
30	20	25.00	12.00	29.00
32	15	25.00	12.00	29.00
44	1	3.60	10.00	29.00
27	1	5.00	8.00	0.00
34	8	15.00	8.00	29.00
6	2	8.00	6.00	98.00
26	2	5.00	6.00	0.00
28	4	1.80	4.40	0.00
20	6	12.50	4.00	29.00
301	2	3.00	3.00	29.00
302	3	4.00	1.50	29.00

MANIFESTING RECORD

NP	WT AV	LEN AV	*****MAIN P/L******** #	KEY	#FL	MASS	LEN	*****SEC P/L******** #	KEY	#FL	MASS	LEN	MC	MF	SF	DM RQ	DM OK	DM MAN	FLTS CG	FRE LEN	FRE MASS
1	27.6	10.1	30	CM06	20	25.0	12.0	32	CM08	15	25.0	12.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	44	TE02	1	3.6	10.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	27	CC04	1	5.0	8.0	5	1	1	*		--	--	--	--
1	27.6	10.1	30	CM06	20	25.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*		--	--	--	--

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1	27.6	10.1	30	CM06	20	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--		
1	27.6	10.1	30	CM06	20	25.0	12.0	26	CC03	2	5.0	6.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	30	CM06	20	25.0	12.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--		
1	27.6	10.1	30	CM06	20	25.0	12.0	20	CM04	6	12.5	4.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	30	CM06	20	25.0	12.0	301	TMS	2	3.0	3.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	30	CM06	20	25.0	12.0	302	TMS	3	4.0	1.5	5	1	1	*	--	--	--	--		
1	27.6	10.1	32	CM08	15	25.0	12.0	44	TE02	1	3.6	10.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	32	CM08	15	25.0	12.0	27	CC04	1	5.0	8.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	32	CM08	15	25.0	12.0	34	OT02	8	15.0	8.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	32	CM08	15	25.0	12.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--		
1	27.6	10.1	32	CM08	15	25.0	12.0	26	CC03	2	5.0	6.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	32	CM08	15	25.0	12.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--		
1	27.6	10.1	32	CM08	15	25.0	12.0	20	CM04	6	12.5	4.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	32	CM08	15	25.0	12.0	301	TMS	2	3.0	3.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	32	CM08	15	25.0	12.0	302	TMS	3	4.0	1.5	5	1	1	*	--	--	--	--		
1	27.6	10.1	44	TE02	1	3.6	10.0	27	CC04	1	5.0	8.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	44	TE02	1	3.6	10.0	34	OT02	8	15.0	8.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	44	TE02	1	3.6	10.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--		
1	27.6	10.1	44	TE02	1	3.6	10.0	26	CC03	2	5.0	6.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	44	TE02	1	3.6	10.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--		
1	27.6	10.1	44	TE02	1	3.6	10.0	20	CM04	6	12.5	4.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	44	TE02	1	3.6	10.0	301	TMS	2	3.0	3.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	44	TE02	1	3.6	10.0	302	TMS	3	4.0	1.5	5	1	1	*	--	--	--	--		
1	27.6	10.1	27	CC04	1	5.0	8.0	34	OT02	8	15.0	8.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	27	CC04	1	5.0	8.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--		
1	27.6	10.1	27	CC04	1	5.0	8.0	26	CC03	2	5.0	6.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	27	CC04	1	5.0	8.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--		
1	27.6	10.1	27	CC04	1	5.0	8.0	20	CM04	6	12.5	4.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	27	CC04	1	5.0	8.0	301	TMS	2	3.0	3.0	5	1	1	*	--	--	--	--		
PROPELLANT DELIVERED USING MINITANKER IS NOW											15.200											
1	27.6	10.1	27	CC04	0	5.0	8.0	302	TMS	2	4.0	1.5	8	1	1	*	1	27.2	0.6	0.8		
1	27.6	10.1	34	OT02	8	15.0	8.0	6	OT04	2	8.0	6.0	4	1	1	*	--	--	--	--		
1	27.6	10.1	34	OT02	8	15.0	8.0	26	CC03	2	5.0	6.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	34	OT02	8	15.0	8.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--		
1	27.6	10.1	34	OT02	8	15.0	8.0	20	CM04	6	12.5	4.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	34	OT02	8	15.0	8.0	301	TMS	2	3.0	3.0	5	1	1	*	--	--	--	--		
1	27.6	10.1	34	OT02	8	15.0	8.0	302	TMS	2	4.0	1.5	7	1	1	*	--	--	--	--		
1	15.5	18.3	6	OT04	2	8.0	6.0	26	CC03	2	5.0	6.0	4	0	0		--	--	--	--		
1	15.5	18.3	6	OT04	2	8.0	6.0	28	CC05	4	1.8	4.4	4	0	0		--	--	--	--		
1	15.5	18.3	6	OT04	2	8.0	6.0	20	CM04	6	12.5	4.0	4	0	0		--	--	--	--		
1	15.5	18.3	6	OT04	2	8.0	6.0	301	TMS	2	3.0	3.0	4	0	0		--	--	--	--		
1	15.5	18.3	6	OT04	2	8.0	6.0	302	TMS	2	4.0	1.5	4	0	0		--	--	--	--		
1	27.6	10.1	26	CC03	2	5.0	6.0	28	CC05	4	1.8	4.4	5	1	1	*	--	--	--	--		
1	27.6	10.1	26	CC03	2	5.0	6.0	20	CM04	6	12.5	4.0	7	1	1	*	--	--	--	--		
PROPELLANT DELIVERED USING MINITANKER IS NOW											45.600											
1	27.6	10.1	26	CC03	0	5.0	6.0	301	TMS	0	3.0	3.0	8	1	1	*	2	27.1	1.1	1.8		
1	27.6	10.1	26	CC03	0	5.0	6.0	302	TMS	2	4.0	1.5	1	1	1	*	--	--	--	--		
PROPELLANT DELIVERED USING MINITANKER IS NOW											100.814											
1	27.6	10.1	28	CC05	0	1.8	4.4	20	CM04	2	12.5	4.0	8	1	1	*	4	26.8	1.7	-3.0		
1	27.6	10.1	28	CC05	0	1.8	4.4	301	TMS	0	3.0	3.0	1	1	1	*	--	--	--	--		
1	27.6	10.1	28	CC05	0	1.8	4.4	302	TMS	2	4.0	1.5	1	1	1	*	--	--	--	--		
1	27.6	10.1	20	CM04	2	12.5	4.0	301	TMS	0	3.0	3.0	1	1	1	*	--	--	--	--		
PROPELLANT DELIVERED USING MINITANKER IS NOW											124.241											
1	27.6	10.1	20	CM04	0	12.5	4.0	302	TMS	0	4.0	1.5	8	1	1	*	2	26.2	4.6	-3.0		
2	29.5	18.3	30	CM06	20	25.0	12.0	32	CM08	15	25.0	12.0	5	0	0		--	--	--	--		
2	29.5	18.3	30	CM06	20	25.0	12.0	44	TE02	1	3.6	10.0	5	0	0		--	--	--	--		
2	29.5	18.3	30	CM06	20	25.0	12.0	27	CC04	0	5.0	8.0	1	0	0		--	--	--	--		
2	29.5	18.3	30	CM06	20	25.0	12.0	34	OT02	8	15.0	8.0	5	0	0		--	--	--	--		
2	29.5	18.3	30	CM06	20	25.0	12.0	6	OT04	2	8.0	6.0	4	0	0		--	--	--	--		
2	29.5	18.3	30	CM06	20	25.0	12.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--		

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2	29.5	18.3	30	CM06	20	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	20	CM04	0	12.5	4.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	20	25.0	12.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	44	TE02	1	3.6	10.0	5	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	27	CC04	0	5.0	8.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	34	OT02	8	15.0	8.0	5	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	6	OT04	2	8.0	6.0	4	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	20	CM04	0	12.5	4.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	29.5	18.3	32	CM08	15	25.0	12.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	29.5	18.3	44	TE02	1	3.6	10.0	27	CC04	0	5.0	8.0	1	0	0		--	--	--	--
2	29.5	18.3	44	TE02	0	3.6	10.0	34	OT02	7	15.0	8.0	8	0	0		1	27.1	0.3	10.9
2	29.5	18.3	44	TE02	0	3.6	10.0	6	OT04	2	8.0	6.0	1	0	0		--	--	--	--
2	29.5	18.3	44	TE02	0	3.6	10.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	29.5	18.3	44	TE02	0	3.6	10.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	29.5	18.3	44	TE02	0	3.6	10.0	20	CM04	0	12.5	4.0	1	0	0		--	--	--	--
2	29.5	18.3	44	TE02	0	3.6	10.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	29.5	18.3	44	TE02	0	3.6	10.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	27.6	16.2	34	OT02	7	15.0	8.0	6	OT04	2	8.0	6.0	4	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	7	15.0	8.0	26	CC03	0	5.0	6.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	7	15.0	8.0	28	CC05	0	1.8	4.4	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	7	15.0	8.0	20	CM04	0	12.5	4.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	7	15.0	8.0	301	TMS	0	3.0	3.0	1	0	0	*	--	--	--	--
2	27.6	16.2	34	OT02	7	15.0	8.0	302	TMS	0	4.0	1.5	1	0	0	*	--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	26	CC03	0	5.0	6.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	28	CC05	0	1.8	4.4	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	20	CM04	0	12.5	4.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	301	TMS	0	3.0	3.0	1	0	0		--	--	--	--
2	15.5	18.3	6	OT04	2	8.0	6.0	302	TMS	0	4.0	1.5	1	0	0		--	--	--	--
2	29.5	18.3	30	CM06	0	25.0	12.0	--	--	--	--	--	8	0	0		20	27.1	6.3	-9.5
2	29.5	18.3	32	CM08	0	25.0	12.0	--	--	--	--	--	8	0	0		15	27.1	6.3	-9.5
2	29.5	18.3	34	OT02	0	15.0	8.0	--	--	--	--	--	8	0	0		7	26.0	10.3	0.5
2	15.5	18.3	6	OT04	0	8.0	6.0	--	--	--	--	--	8	0	0		2	23.5	12.3	7.5

PROPELLANT NEEDED THIS YEAR = 123.
PROPELLANT LEFT FROM PRIOR YEAR = 11.
PROPELLANT DELIVERED BY MINITANKER = 124.
PROPELLANT DELIVERED BY ET SCAVENGING = 0.

ORIGINAL PAGE IS
OF POOR QUALITY

MANIFEST #	KEY REF	DESCRIPTION	MATCHED WITH	NO. FLTS	OTV USED	OTV EXP	P/L BAY LENGTH	LAUNCH MASS	TIME ON ORBIT	SP STA OPERATION
1	CC04	**MULTIBEAM COMM SATELLITE	TMS PROP DELIV	1	1	0	17.7	28.7	2.0	FS
2	CC03	**INTELSAT-7,7A CLASS COMSAT	TMS CAB DELIVERY	2	1	0	17.2	27.7	2.0	FS
3	CC05	**RECONFIGURABLE COMM. SATELLI	CRYSTAL GROWTH RESUP-2	4	1	0	16.6	32.5	4.0	FS
4	CM04	**CRYSTAL GROWTH RESUP-2	TMS PROP DELIV	2	0	0	13.7	32.5	2.0	FS
5	TE02	LIQ DROPLET RADIATOR	LOW INCL STA RESUPPLY	1	0	0	18.0	18.6	4.0	FS
6	CM06	CONTINUOUS FLOW ELECTRO RESUPP		20	0	0	12.0	25.0	2.0	FS
7	CM08	GLASSPROC OPTICA LFIBERS RESUPP		15	0	0	12.0	25.0	2.0	C
8	OT02	LOW INCL STA RESUPPLY		7	0	0	8.0	15.0	2.0	C
9	OT04	HI-INCL STATION RESUPPLY		2	0	0	6.0	8.0	2.0	C

** - MANIFESTED WITH MINITANKER

NO. OF SHUTTLE FLIGHTS 54
NO. OF TMS OPS 18
NO. OF MANNED TMS OPS 18
NO. OF SELF:PROP SAT SERV OPS 0
TMS & SATELLITE PROPELLANT USED 6.41
NO. OF OTV REUSE FLIGHTS 7
NO. OF OTVS EXPENDED 0
SPACE STATION FLT SERVICE OPS 10
SPACE STATION CONSTR OPS 25
SPACE STATION PROP XFER OPS 9
HLLV FLIGHTS 0

ORIGINAL PAGE IS
OF POOR QUALITY

FLEET TIME ON ORBIT = 118.0 DAYS
TOTAL FLEET TIME = 2008.0 DAYS
IDEAL MIN FLEET SIZE = 6.44 VEHICLES

STS WORK MATRIX

	TIME	S/C FLUI	SPST OPS	EVA CPOP	EVA WORK
ORBITER ARRIVE	0.0416	0	150	0	0
ORBITER OFFLOAD	0.6000	0	100	100	100
ORBITER RELOAD	0.6000	0	100	100	100
ORBITER DEPART	0.0210	0	200	0	0
ORBITER PROP XFR	0.5417	100	125	0	0

OTV WORK MATRIX

	TIME	S/C DATA	S/C ELEC	S/C MECH	S/C FLUI	SPST OPS	EVA CPOP	EVA WORK	MOTV PIL
MAINTAIN STAGE	1.1500	30	75	40	25	100	0	150	0
MATE TO PAYLD	0.1310	0	0	0	0	100	67	67	0
STAGE/STAGE MATE	0.2100	0	0	0	0	100	67	67	0
OTV/PLD C/O	0.5550	50	50	50	20	5	5	5	0
LAUNCH	0.0820	50	50	50	100	100	0	0	50
CAPTURE	0.0416	0	0	0	0	100	0	0	50
CREW MOD MAINT	1.7100	30	30	30	30	100	0	150	0
CREW MOD MATE	0.1310	0	0	0	0	100	67	67	0
CREW INGRESS	0.0625	0	100	100	0	0	0	0	100
CREW EGRESS	0.0625	0	100	100	0	0	0	0	100
CREW MOD DEMATE	0.1210	0	0	0	0	100	100	100	0
AEROBRAKE EXCH	1.1460	0	0	0	0	11	22	150	0
MISSION OPS	MSN DEP	50	50	50	50	0	0	0	100

SATELLITE SERVICING WORK MATRIX

	TIME	NO SPEC	S/C DATA	S/C ELEC	S/C MECH	S/C FLUI	SPST OPS	EVA CPOP	EVA WORK	MOTV PIL	TMS PIL
SETUP/TAKEDOWN	MSN DEP	0	0	0	0	0	100	100	100	0	0
MATE TO FIXT	0.0560	0	0	0	0	0	100	100	100	0	0
SERVICE	MSN DEP	25	25	25	25	25	100	50	100	0	0
REMOTE SERVICE	MSN DEP	25	25	25	25	25	50	0	0	0	100
TEST & C/O	MSN DEP	25	100	0	10	5	100	0	0	0	0
TMS LAUNCH	0.0820	0	100	100	100	100	100	0	0	0	100
TMS OPS	MSN DEP	0	10	0	0	0	10	0	0	0	100
TMS MATE/DEMATE	0.2600	0	0	0	0	0	100	67	67	0	0
TMS CREW OPS	MSN DEP	25	100	0	100	0	10	0	0	0	100
TMS CAPTURE/BRTH	0.0420	0	50	50	0	0	100	0	0	0	100
TMS MAINT/REFUEL	1.1000	10	50	5	75	25	100	0	75	0	0
CREW MOD MAINT	1.7100	25	50	50	75	0	100	0	150	0	0
SPACE STA HOUSEK	MSN DEP	10	0	0	0	0	70	10	10	0	0

SCIENCE & APP WORK MATRIX

	TIME	NO SPEC	MED/ BIO	PHYS SCI	E&OC SCI	ENGR	ASTR SCI	S/C DATA	S/C ELEC	S/C MECH	S/C FLUI	SPST OPS	EVA CPOP	EVA WORK	MOTV PIL	TMS PIL	MAT SCI
LIFE SCIENCE	MSN DEP	10	100	0	0	0	0	0	5	0	5	5	0	0	0	0	0
MPRES & DEV	MSN DEP	10	0	0	0	0	0	0	5	0	5	5	0	0	0	0	100
PHYSICS SCIENCE	MSN DEP	10	0	100	0	0	0	0	5	0	5	5	0	0	0	0	0
EARTH & OC SCI	MSN DEP	10	0	0	100	0	0	0	5	0	5	5	0	0	0	0	0
ASTROPHYSICS	MSN DEP	10	0	0	0	0	100	0	5	0	5	5	0	0	0	0	0
DOD/TECH DEV	MSN DEP	20	0	0	0	100	0	15	5	5	20	10	5	5	15	0	0

CONSTRUCTION WORK MATRIX

	TIME	S/C DATA	S/C ELEC	S/C MECH	S/C FLUI	SPST OPS	EVA CPOP	EVA WORK
SETUP/TAKEDOWN	MSN DEP	0	0	0	0	100	100	100
MATE TO FIXT	0.0560	0	0	0	0	100	100	100
DEPLOY/ASSEMBLE	MSN DEP	0	0	0	0	100	100	0
TEST & C/O	MSN DEP	40	25	25	25	100	0	0
MODULE MATE	MSN DEP	10	25	25	0	100	100	100
FAB STRUCT	MSN DEP	0	0	0	0	100	50	50

* * * SPACE STATION OPERATIONS ANALYSIS FOR YEAR 1990 * * *

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 1
NUMBER OF FLIGHTS: 1 PRIME MISSION: **CONT FLOW ELEC TROPH PLATFOR OUTCOME # IS 10 KEY IS CM05
INCLINATION IS 29.00
CODE IS PMCL

SHUTTLE OPERATIONS

*--> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 1.391

STS OPERATIONS CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - FLUIDS	1.661
SP STA SYS OPS	5.035
EVA CRANE OP	2.520
EVA SERVICE TECH	2.520

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.718

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	0.848
S/C SYS - ELEC	0.590
S/C SYS - MECH	0.590
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	3.436
EVA CRANE OP	1.394
EVA SERVICE TECH	1.394

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DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	1.4
CONSTRUCTION OPERATIONS	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 3
NUMBER OF FLIGHTS: 1 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 1.391
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	2.958
EVA CRANE OP	2.520
EVA SERVICE TECH	2.520

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 3 IN MANDAYS/YR

STS OPERATIONS	1.4
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 4
NUMBER OF FLIGHTS: 4 PRIME MISSION: LOW INCL STA RESUPPLY OUTCOME # IS 0 KEY IS OT02
INCLINATION IS 29.00
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 4 FLIGHTS: 10.606
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 21.914

EVA CRANE OP 20.160

EVA SERVICE TECH 20.160

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 4 IN MANDAYS/YR

STS OPERATIONS	10.6
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 1 TYPE #2 = 0

***>> FLIGHT NO. 5
NUMBER OF FLIGHTS: 1 PRIME MISSION: ASTROPHYSICS OBSERVATORIES OUTCOME # IS 10 KEY IS SA04
INCLINATION IS 29.00
CODE IS FMXM

SHUTTLE OPERATIONS

*--> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 1.391
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 2.958

EVA CRANE OP 2.520

EVA SERVICE TECH 2.520

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 5 IN MANDAYS/YR

STS OPERATIONS	1.4
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

PAYLOADS SERVICING ANALYSIS

PAYLOAD WITH KEY SA04 ASTROPHYSICS OBSERVATORIES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	6.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 23 SA04 38.5 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.278
S/C SYS - DATA	40.774
S/C SYS - ELEC	10.555
S/C SYS - MECH	29.524
S/C SYS - FLUIDS	8.513
SP STA SYS OPS	41.723
EVA SERVICE TECH	14.238
TMS PILOT	50.921

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 23 SA04 IN MANDAYS/YR

SERVICING OPERATIONS	38.5
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM05 CONT FLOW ELEC- TROPH PLATFORM

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

ADJUSTED SERVICING TIME FOR 29 CM05 0.0 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 29 CM05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM06 CONTINUOUS FLOW ELECTRO RESUPP

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 48.000
TEST & C/O = 1.944
TMS LAUNCH = 0.328
TMS OPS = 12.000
TMS CREW OPS = 12.000
TMS CAPTURE/BRTH = 0.168
TMS MAINT/REFUEL = 4.400
CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 30 CM06 179.9 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	74.071
S/C SYS - DATA	139.339
S/C SYS - ELEC	67.418
S/C SYS - MECH	138.400
S/C SYS - FLUIDS	56.806
SP STA SYS OPS	168.336
EVA SERVICE TECH	56.952
TMS PILOT	304.483

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 30 CM06 IN MANDAYS/YR

SERVICING OPERATIONS 179.9
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT01 LOW INCL STA MODULE DEL

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 33 OT01 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 67.200

SP STA SYS OPS 470.400

EVA CRANE OP 67.200

EVA SERVICE TECH 67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 33 OT01 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT02 LOW INCL STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 34 OT02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

SKILL MIX SUMMARIES LOW INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	15.3	0.0	0.0	0.0	74.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	40.8	0.0	0.0	0.0	139.3	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	10.6	0.0	0.0	0.0	67.4	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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S/C SYS - MECH	0.0	29.5	0.0	0.0	0.0	138.4	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	8.5	0.0	0.0	0.0	56.8	0.0	0.5	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0
SP STA SYS OPS	2.5	41.7	0.0	0.0	5.0	168.3	0.0	3.4	0.0	0.0	0.0	0.0	25.3	470.4	0.0	0.0	0.0
EVA CRANE OP	2.5	0.0	0.0	0.0	5.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	20.2	67.2	0.0	0.0	0.0
EVA SERVICE TECH	2.5	14.2	0.0	0.0	5.0	57.0	0.0	1.4	0.0	0.0	0.0	0.0	20.2	67.2	0.0	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	50.9	0.0	0.0	0.0	304.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
219.	1030.	0.	739.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	156.5
MED/BIO RESEARCH	0.0
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	0.0
ENGINEERING	0.0
ASTROPHSICS	0.0
S/C SYS - DATA	181.0
S/C SYS - ELEC	78.6
S/C SYS - MECH	168.5
S/C SYS - FLUIDS	67.5
SP STA SYS OPS	716.8
EVA CRANE OP	96.3
EVA SERVICE TECH	167.5
MANNED OTV PILOT	0.0
TMS PILOT	355.4
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 5.4 PEOPLE

SKILL MIX SUMMARIES HIGH INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SP STA SYS OPS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EVA CRANE OP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EVA SERVICE TECH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
0.	0.	0.	0.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	0.0
MED/BIO RESEARCH	0.0
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	0.0
ENGINEERING	0.0
ASTROPHSICS	0.0
S/C SYS - DATA	0.0
S/C SYS - ELEC	0.0
S/C SYS - MECH	0.0
S/C SYS - FLUIDS	0.0
SP STA SYS OPS	0.0
EVA CRANE OP	0.0
EVA SERVICE TECH	0.0
MANNED OTV PILOT	0.0
TMS PILOT	0.0
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 0.0 PEOPLE

LOW INCLINATION

DURATION SUMMARY FOR YEAR 1990 IN MANDAYS/YR

STS OPERATIONS	14.8
CONSTRUCTION	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0
SERVICING OPERATIONS	554.4
SCIENCE & TECH DEMO	0.0

HIGH INCLINATION

DURATION SUMMARY FOR YEAR 1990 IN MANDAYS/YR

STS OPERATIONS	0.0
CONSTRUCTION	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0
SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	0.0

SUMMARY OF SPACE STATION PAYLOADS THIS YEAR

KEY	TITLE	PLCODE	INCL	PK POWER	DUTY CYCLE
SA04	ASTROPHYSICS	FMXM	29.0	1.0	100.0

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OBSERVATORIES

CM05	CONT FLOW ELEC-TROPH PLATFORM	PMCL	29.0	0.0	100.0
CM06	CONTINUOUS FLOW ELECTRO RESUPP	PMXL	29.0	2.0	0.0
OT01	LOW INCL STA MODULE DEL	SSSS	29.0	20.0	100.0
OT02	LOW INCL STA RESUPPLY	SORS	29.0	0.0	100.0

LOW INCLINATION

PEAK POWER	AVERAGE POWER
23.0	21.0

HIGH INCLINATION

PEAK POWER	AVERAGE POWER
0.0	0.0

RESOURCES SUMMARY FOR LOW INCLINATION SPACE STATION

INTERNAL VOLUME	0.0	CUBIC METERS
POWER	21.0	KW
NO. OF PORTS	0.	

RESOURCES SUMMARY FOR HIGH INCLINATION SPACE STATION

INTERNAL VOLUME	0.0	CUBIC METERS
POWER	0.0	KW
NO. OF PORTS	0.	

POINTING & DISTURBANCE SUMMARY FOR LOW INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350
SA04	----------														
CM05	----------														
CM06							-								
OT01	----------														
OT02	----------														

POINTING & DISTURBANCE SUMMARY FOR HIGH INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

				1	1	1	1	2	2	2	2	3	3	3
	2	5	7	0	2	5	7	0	2	5	7	0	2	5
0	5	0	5	0	5	0	5	0	5	0	5	0	5	0

* * * SPACE STATION OPERATIONS ANALYSIS FOR YEAR 1991 * * *

TYPE #1 = 1 TYPE #2 = 2

***>> FLIGHT NO. 1
NUMBER OF FLIGHTS: 1 PRIME MISSION: ASTRO TELESCOPE CLUSTER OUTCOME # IS -2 KEY IS SA02
INCLINATION IS 29.00
CODE IS SPXX
SECOND MISSION: RECONFIGURABLE COMM. SATELLITE OUTCOME # IS 0
KEY IS CC05
CODE IS FXCM

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.739
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 5.741

EVA CRANE OP 5.040

EVA SERVICE TECH 5.040

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 7.000

ADJ OTV OP DURATION FOR SECOND MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 19.256AWAY 14.700
SECOND MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 17.487

S/C SYS - ELEC 19.660

S/C SYS - MECH 17.970

S/C SYS - FLUIDS 16.718

SP STA SYS OPS 12.638

EVA CRANE OP 6.116

EVA SERVICE TECH 13.361

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MANNED OTV PILOT 29.660

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	19.3
OTV MISSIONS	14.7

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.140
TEST & C/O	=	3.400
MODULE MATE	=	0.152

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 9.956

SECOND CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	5.776
S/C SYS - ELEC	3.730
S/C SYS - MECH	3.730
S/C SYS - FLUIDS	3.570
SP STA SYS OPS	19.912
EVA CRANE OP	5.632
EVA SERVICE TECH	5.044

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	10.0
OTV OPERATIONS	19.3
OTV MISSIONS	14.7

TYPE #1 = 2 TYPE #2 = 3

***>> FLIGHT NO. 2
NUMBER OF FLIGHTS: 1 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCINATION IS 29.00
CODE IS PMXL
SECOND MISSION: CONSTR,STORAGE, & HANGAR OUTCOME # IS 0
KEY IS TM01
CODE IS SPCM

SHUTTLE OPERATIONS

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UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.739
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	5.741
EVA CRANE OP	5.040
EVA SERVICE TEC	5.040

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	8.400
TEST & C/O	=	3.400
MODULE MATE	=	0.152

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 27.302
SECOND MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	5.776
S/C SYS - ELEC	3.730
S/C SYS - MECH	3.730
S/C SYS - FLUIDS	3.570
SP STA SYS OPS	54.604
EVA CRANE OP	40.324
EVA SERVICE TECH	5.044

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	27.3
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 3
NUMBER OF FLIGHTS: 1 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 10 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL
SECOND MISSION: TMS PROP DELIV OUTCOME # IS 0

SHUTTLE OPERATIONS

*--> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.999
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 8.261

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 3 IN MANDAYS/YR

STS OPERATIONS	4.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 4
NUMBER OF FLIGHTS: 2 PRIME MISSION: LOW INCL STA MODULE DEL OUTCOME # IS 0 KEY IS OT01
INCLINATION IS 29.00
CODE IS SSSS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 2.958
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 6.441

EVA CRANE OP 5.040

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EVA SERVICE TECH 5.040

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 4 IN MANDAYS/YR

STS OPERATIONS	3.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 5
NUMBER OF FLIGHTS: 2 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 2.958
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	6.441
EVA CRANE OP	5.040
EVA SERVICE TECH	5.040

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 5 IN MANDAYS/YR

STS OPERATIONS	3.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 6
NUMBER OF FLIGHTS: 4 PRIME MISSION: LOW INCL STA RESUPPLY OUTCOME # IS 10 KEY IS OT02
INCLINATION IS 29.00
CODE IS SORS

SHUTTLE OPERATIONS

*---> THIS FLIGHT MANIFESTED WITH MINITANKER

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UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 4 FLIGHTS: 10.955
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 22.962

EVA CRANE OP 20.160

EVA SERVICE TECH 20.160

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 6 IN MANDAYS/YR

STS OPERATIONS	11.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 7
NUMBER OF FLIGHTS: 2 PRIME MISSION: SPACE STATION MODULES OUTCOME # IS 0 KEY IS OT03
INCLINATION IS 98.00
CODE IS SSSS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 2.958
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 6.441

EVA CRANE OP 5.040

EVA SERVICE TECH 5.040

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 7 IN MANDAYS/YR

STS OPERATIONS	3.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0

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OTV MISSIONS	0.0

PAYLOADS SERVICING ANALYSIS

PAYLOAD WITH KEY OT03 SPACE STATION MODULES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 5 OT03 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	67.200
SP STA SYS OPS	470.400
EVA CRANE OP	67.200
EVA SERVICE TECH	67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 5 OT03 IN MANDAYS/YR

SERVICING OPERATIONS	336.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY SL01 HUMAN LIFE SI CARRY-ONS

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 73.000

UPDATED WORK DURATION AT SP STA 73.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	7.300
MED/BIO RESEARCH	73.000

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S/C SYS - ELEC 3.650

S/C SYS - FLUIDS 3.650

SP STA SYS OPS 3.650

DURATION SUMMARY FOR PAYLOAD NO. 11 SL01 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 73.0

PAYLOAD WITH KEY SL02 SMALL MAMMALS CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 41.000

UPDATED WORK DURATION AT SP STA 41.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 4.100

MED/BIO RESEARCH 41.000

S/C SYS - ELEC 2.050

S/C SYS - FLUIDS 2.050

SP STA SYS OPS 2.050

DURATION SUMMARY FOR PAYLOAD NO. 12 SL02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 41.0

PAYLOAD WITH KEY SA02 ASTRO TELESCOPE CLUSTER

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 65.000

UPDATED WORK DURATION AT SP STA 65.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	6.500
ASTROPHSICS	65.000
S/C SYS - ELEC	3.250
S/C SYS - FLUIDS	3.250
SP STA SYS OPS	3.250

DURATION SUMMARY FOR PAYLOAD NO. 21 SA02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	65.0

PAYLOAD WITH KEY SA04 ASTROPHYSICS OBSERVATORIES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	6.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 23 SA04 38.5 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.278
S/C SYS - DATA	40.774
S/C SYS - ELEC	10.555
S/C SYS - MECH	29.524
S/C SYS - FLUIDS	8.513
SP STA SYS OPS	41.723
EVA SERVICE TECH	14.238
TMS PILOT	50.921

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 23 SA04 IN MANDAYS/YR

SERVICING OPERATIONS 38.5
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC05 RECONFIGURABLE COMM. SATELLITE

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 28 CC05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM05 CONT FLOW ELEC- TROPH PLATFORM

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

ADJUSTED SERVICING TIME FOR 29 CM05 0.0 DAYS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 29 CM05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM06 CONTINUOUS FLOW ELECTRO RESUPP

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	48.000
TEST & C/O	=	1.944
TMS LAUNCH	=	0.328
TMS OPS	=	12.000
TMS CREW OPS	=	12.000
TMS CAPTURE/BRTH	=	0.168
TMS MAINT/REFUEL	=	4.400
CREW MOD MAINT	=	6.840

ADJUSTED SERVICING TIME FOR 30 CM06 179.9 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	74.071
S/C SYS - DATA	139.339
S/C SYS - ELEC	67.418
S/C SYS - MECH	138.400
S/C SYS - FLUIDS	56.806
SP STA SYS OPS	168.336
EVA SERVICE TECH	56.952
TMS PILOT	304.483

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 30 CM06 IN MANDAYS/YR

SERVICING OPERATIONS	179.9
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY OT01 LOW INCL STA MODULE DEL

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 33 OT01 336.0 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	67.200
SP STA SYS OPS	470.400
EVA CRANE OP	67.200
EVA SERVICE TECH	67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 33 OT01 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT02 LOW INCL STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 34 OT02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY TM01 CONSTR,STORAGE, & HANGAR

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 10.000

UPDATED WORK DURATION AT SP STA 10.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	2.000
ENGINEERING	10.000
S/C SYS - DATA	1.500
S/C SYS - ELEC	0.500
S/C SYS - MECH	0.500
S/C SYS - FLUIDS	2.000
SP STA SYS OPS	1.000
EVA CRANE OP	0.500
EVA SERVICE TECH	0.500
MANNED OTV PILOT	1.500

DURATION SUMMARY FOR PAYLOAD NO. 36 TM01 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 10.0

PAYLOAD WITH KEY TS02 TECH DEVEL CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 20.000

UPDATED WORK DURATION AT SP STA 20.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	4.000
ENGINEERING	20.000
S/C SYS - DATA	3.000
S/C SYS - ELEC	1.000
S/C SYS - MECH	1.000
S/C SYS - FLUIDS	4.000
SP STA SYS OPS	2.000
EVA CRANE OP	1.000
EVA SERVICE TECH	1.000
MANNED OTV PILOT	3.000

DURATION SUMMARY FOR PAYLOAD NO. 45 TS02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 20.0

SKILL MIX SUMMARIES LOW INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	15.3	17.9	0.0	0.0	74.1	0.0	0.0	0.0	0.0	6.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	114.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

EARTH, OCEAN OBS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	65.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	40.8	0.0	0.0	17.5	139.3	0.0	5.8	0.0	0.0	4.5	5.8	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	10.6	9.0	0.0	19.7	67.4	0.0	3.7	0.0	0.0	1.5	3.7	0.0	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	29.5	0.0	0.0	18.0	138.4	0.0	3.7	0.0	0.0	1.5	3.7	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	8.5	9.0	0.0	16.7	56.8	0.0	3.6	0.0	0.0	6.0	3.6	0.0	0.0	0.0	0.0	0.0
SP STA SYS OPS	5.0	41.7	9.0	0.0	22.0	168.3	0.0	19.9	2.5	0.0	3.0	54.6	38.6	470.4	0.0	0.0	0.0
EVA CRANE OP	5.0	0.0	0.0	0.0	16.2	0.0	0.0	5.6	2.5	0.0	1.5	40.3	30.2	67.2	0.0	0.0	0.0
EVA SERVICE TECH	5.0	14.2	0.0	0.0	23.4	57.0	0.0	5.0	2.5	0.0	1.5	5.0	30.2	67.2	0.0	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	29.7	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	50.9	0.0	0.0	0.0	304.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
450.	1216.	184.	771.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	180.4
MED/BIO RESEARCH	114.0
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	0.0
ENGINEERING	30.0
ASTROPHSICS	65.0
S/C SYS - DATA	213.7
S/C SYS - ELEC	115.5
S/C SYS - MECH	194.9
S/C SYS - FLUIDS	104.1
SP STA SYS OPS	835.1
EVA CRANE OP	168.7
EVA SERVICE TECH	211.2
MANNED OTV PILOT	34.2
TMS PILOT	355.4
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 7.2 PEOPLE

SKILL MIX SUMMARIES HIGH INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SP STA SYS OPS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.4	470.4	0.0	0.0

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EVA CRANE OP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	67.2	0.0	0.0
EVA SERVICE TECH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
0.	0.	0.	689.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	67.2
MED/BIO RESEARCH	0.0
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	0.0
ENGINEERING	0.0
ASTROPHSICS	0.0
S/C SYS - DATA	0.0
S/C SYS - ELEC	0.0
S/C SYS - MECH	0.0
S/C SYS - FLUIL	0.0
SP STA SYS OPS	476.8
EVA CRANE OP	72.2
EVA SERVICE TECH	72.2
MANNED OTV PILOT	0.0
TMS PILOT	0.0
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 1.9 PEOPLE

LOW INCLINATION

DURATION SUMMARY FOR YEAR 1991 IN MANDAYS/YR

STS OPERATIONS	26.3
CONSTRUCTION	37.3
OTV OPERATIONS	19.3
OTV MISSIONS	14.7
SERVICING OPERATIONS	554.4
SCIENCE & TECH DEMO	209.0

HIGH INCLINATION

DURATION SUMMARY FOR YEAR 1991 IN MANDAYS/YR

STS OPERATIONS	3.0
CONSTRUCTION	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0
SERVICING OPERATIONS	336.0
SCIENCE & TECH DEMO	0.0

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SUMMARY OF SPACE STATION PAYLOADS THIS YEAR

KEY	TITLE	PLCODE	INCL	PK POWER	DUTY CYCLE
OT03	SPACE STATION MODULES	SSSS	98.0	15.0	100.0
SL01	HUMAN LIFE SI CARRY-ONS	SSSA	29.0	1.7	100.0
SL02	SMALL MAMMALS CARRY-ONS	SSSA	29.0	4.0	100.0
SA02	ASTRO TELESCOPE CLUSTER	SPXX	29.0	4.0	100.0
SA04	ASTROPHYSICS OBSERVATORIES	FMXM	29.0	1.0	100.0
CC05	RECONFIGURABLE COMM. SATELLITE	FXCM	0.0	0.0	1.9
CM05	CONT FLOW ELEC-TROPH PLATFORM	PMCL	29.0	0.0	100.0
CM06	CONTINUOUS FLOW ELECTRO RESUPP	PMXL	29.0	2.0	0.0
OT01	LOW INCL STA MODULE DEL	SSSS	29.0	20.0	100.0
OT02	LOW INCL STA RESUPPLY	SORS	29.0	0.0	100.0
TM01	CONSTR,STORAGE, & HANGAR	SPCM	29.0	1.0	5.5
TS02	TECH DEVEL CARRY-ONS	SSSA	29.0	0.5	6.8

LOW INCLINATION

PEAK POWER	AVERAGE POWER
34.2	30.8

HIGH INCLINATION

PEAK POWER	AVERAGE POWER
15.0	15.0

RESOURCES SUMMARY FOR LOW INCLINATION SPACE STATION

INTERNAL VOLUME	10.8 CUBIC METERS
POWER	30.8 KW
NO. OF PORTS	2.

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RESOURCES SUMMARY FOR HIGH INCLINATION SPACE STATION

INTERNAL VOLUME	0.0	CUBIC METERS
POWER	15.0	KW
NO. OF PORTS	0.	

POINTING & DISTURBANCE SUMMARY FOR LOW INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350
SL01	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
SA02	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********
SA04	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CC05								-							
CM05	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM06								-							
OT01	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
OT02	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
TM01								----							
TS02								-----							

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POINTING & DISTURBANCE SUMMARY FOR HIGH INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

	25	50	75	100	125	150	175	200	225	250	275	300	325	350
0														

OT03 ----------

* * * SPACE STATION OPERATIONS ANALYSIS FOR YEAR 1992 * * *

TYPE #1 = 1 TYPE #2 = 1

***>> FLIGHT NO. 1
NUMBER OF FLIGHTS: 1 PRIME MISSION: VLBI/COSMIC RAY PKG OUTCOME # IS 0 KEY IS SA01
INCLINATION IS 98.00
CODE IS SPCL
SECOND MISSION: SPACE SCIENCE SUBSATELLITE OUTCOME # IS 0
KEY IS SP01
CODE IS FSXX

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.651
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	5.478
EVA CRANE OP	5.040
EVA SERVICE TECH	5.040

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.140
TEST & C/O = 0.486

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.852
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	0.816
S/C SYS - ELEC	0.510
S/C SYS - MECH	0.510
S/C SYS - FLUIDS	0 510
SP STA SYS OPS	3.704
EVA CRANE OP	1.663
EVA SERVICE TECH	1.075

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	1.9
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	1.9
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 3 TYPE #2 = 4

***>> FLIGHT NO. 2
NUMBER OF FLIGHTS: 1 PRIME MISSION: **PROP TRANSFER & STORAGE OUTCOME # IS 0 KEY IS TP01
INCLINATION IS 29.00
CODE IS SPCL
SECOND MISSION: TMS CAB DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS

ORBITER ARRIVE	=	0.0416	
ORBITER OFFLOAD	=	0.6000	
ORBITER OFFLOAD	=	0.6000	(MISSION 2)
ORBITER RELOAD	=	0.6000	(MISSION 2)
ORBITER DEPART	=	0.0210	
ORBITER PROP XFR	=	0.3792	

ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911

STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - FLUIDS	1.593
SP STA SYS OPS	9.989
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.200
MATE TO FIXT	=	0.056
TEST & C/O	=	0.486
MODULE MATE	=	0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.718

FIRST MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - DATA	0.848
S/C SYS - ELEC	0.590

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S/C SYS - MECH	0.590
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	3.436
EVA CRANE OP	1.394
EVA SERVICE TECH	1.394

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 2

***>> FLIGHT NO. 3
NUMBER OF FLIGHTS: 1 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL
SECOND MISSION: RECONFIGURABLE COMM. SATELLITE OUTCOME # IS 1
KEY IS CC05
CODE IS FXCM

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.739
STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
SP STA SYS OPS	5.741
EVA CRANE OP	5.040
EVA SERVICE TECH	5.040

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 7.000

ADJ OTV OP DURATION FOR SECOND MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 19.256AWAY 14.700

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SECOND CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	17.487
S/C SYS - ELEC	19.660
S/C SYS - MECH	17.970
S/C SYS - FLUIDS	16.718
SP STA SYS OPS	12.638
EVA CRANE OP	6.116
EVA SERVICE TECH	13.361
MANNED OTV PILOT	29.660

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 3 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	19.3
OTV MISSIONS	14.7

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.140
TEST & C/O	=	3.400
MODULE MATE	=	0.152

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 9.956

SECOND CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	5.776
S/C SYS - ELEC	3.730
S/C SYS - MECH	3.730
S/C SYS - FLUIDS	3.570
SP STA SYS OPS	19.912
EVA CRANE OP	5.632
EVA SERVICE TECH	5.044

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 3 IN MANDAYS/YR

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STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	10.0
OTV OPERATIONS	19.3
OTV MISSIONS	14.7

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 4
NUMBER OF FLIGHTS: 1 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL
SECOND MISSION: TMS PROP DELIV OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.999
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	8.261
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 4 IN MANDAYS/YR

STS OPERATIONS	4.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 5
NUMBER OF FLIGHTS: 2 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 2.958
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

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S/C SYS - FLUIDS	1.021
SP STA SYS OPS	8.098
EVA CRANE OP	4.015
EVA SERVICE TECH	3.427

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 6 IN MANDAYS/YR

STS OPERATIONS	3.0
CONSTRUCTION OPERATIONS	4.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 7
NUMBER OF FLIGHTS: 1 PRIME MISSION: GLASS PROC PLANT OUTCOME # IS 11 KEY IS CM07
INCLINATION IS 29.00
CODE IS SPCL

SHUTTLE OPERATIONS

*--> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 1.479
STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
SP STA SYS OPS	3.221
EVA CRANE OP	2.520
EVA SERVICE TECH	2.520

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.558
FIRST MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - DATA	0.816
S/C SYS - ELEC	0.510
S/C SYS - MECH	0.510

S/C SYS - FLUIDS 0.510

SP STA SYS OPS 3.116

EVA CRANE OP 1.075

EVA SERVICE TECH 1.075

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 7 IN MANDAYS/YR

STS OPERATIONS	1.5
CONSTRUCTION OPERATIONS	1.6
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 8
NUMBER OF FLIGHTS: 4 PRIME MISSION: LOW INCL STA RESUPPLY OUTCOME # IS 10 KEY IS OT02
INCLINATION IS 29.00
CODE IS SORS

SHUTTLE OPERATIONS

*--> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 4 FLIGHTS: 10.955
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 22.962

EVA CRANE OP 20.160

EVA SERVICE TECH 20.160

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 8 IN MANDAYS/YR

STS OPERATIONS	11.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 9
NUMBER OF FLIGHTS: 2 PRIME MISSION: SPACE STATION MODULES OUTCOME # IS 11 KEY IS OT03
INCLINATION IS 98.00

CODE IS SSSS

SHUTTLE OPERATIONS

*--> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 2.958
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 6.441

EVA CRANE OP 5.040

EVA SERVICE TECH 5.040

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 9 IN MANDAYS/YR

STS OPERATIONS	3.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 10
NUMBER OF FLIGHTS: 1 PRIME MISSION: MATLS SCIENCE LAB OUTCOME # IS 11 KEY IS CM01
INCLINATION IS 29.00
CODE IS SPXX

SHUTTLE OPERATIONS

*--> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 1.479
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 3.221

EVA CRANE OP 2.520

EVA SERVICE TECH 2.520

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 10 IN MANDAYS/YR

STS OPERATIONS	1.5
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 11
NUMBER OF FLIGHTS: 1 PRIME MISSION: HI-INCL STATION RESUPPLY OUTCOME # IS 10 KEY IS OT04
INCLINATION IS 98.00
CODE IS SORS

SHUTTLE OPERATIONS

*--> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.739

STS OPERATIONS CREW SKILL	MISSION RESULTS MANDAYS
SP STA SYS OPS	5.741
EVA CRANE OP	5.040
EVA SERVICE TECH	5.040

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 11 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

PAYLOADS SERVICING ANALYSIS

PAYLOAD WITH KEY OT03 SPACE STATION MODULES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 5 OT03 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 67.200

SP STA SYS OPS 470.400

EVA CRANE OP 67.200

EVA SERVICE TECH 67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 5 OT03 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT04 HI-INCL STATION RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 6 OT04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SP01 SPACE SCIENCE SUBSATELLITE

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
TMS MATE/DEMATE = 0.260

ADJUSTED SERVICING TIME FOR 7 SP01 2.1 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	0.510
S/C SYS - DATA	2.041
S/C SYS - MECH	0.204
S/C SYS - FLUIDS	0.102
SP STA SYS OPS	4.208
EVA CRANE OP	1.807
EVA SERVICE TECH	1.807

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 7 SP01 IN MANDAYS/YR

SERVICING OPERATIONS	2.1
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY SA01 VLBI/COSMIC RAY PKG

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 67.000

UPDATED WORK DURATION AT SP STA 67.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	6.700
ASTROPHSICS	67.000
S/C SYS - ELEC	3.350
S/C SYS - FLUIDS	3.350
SP STA SYS OPS	3.350

DURATION SUMMARY FOR PAYLOAD NO. 9 SA01 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 67.0

PAYLOAD WITH KEY SL01 HUMAN LIFE SI CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 73.000

UPDATED WORK DURATION AT SP STA 73.0 WORK DAYS

RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 7.300

MED/BIO RESEARCH 73.000

S/C SYS - ELEC 3.650

S/C SYS - FLUIDS 3.650

SP STA SYS OPS 3.650

DURATION SUMMARY FOR PAYLOAD NO. 11 SL01 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 73.0

PAYLOAD WITH KEY SL02 SMALL MAMMALS CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 41.000

UPDATED WORK DURATION AT SP STA 41.0 WORK DAYS

RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 4.100

MED/BIO RESEARCH	41.000
S/C SYS - ELEC	2.050
S/C SYS - FLUIDS	2.050
SP STA SYS OPS	2.050

DURATION SUMMARY FOR PAYLOAD NO. 12 SL02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	41.0

PAYLOAD WITH KEY SL03 PLANT DEVEL CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

LIFE SCIENCE = 14.000

UPDATED WORK DURATION AT SP STA 14.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	1.400
MED/BIO RESEARCH	14.000
S/C SYS - ELEC	0.700
S/C SYS - FLUIDS	0.700
SP STA SYS OPS	0.700

DURATION SUMMARY FOR PAYLOAD NO. 13 SL03 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	14.0

PAYLOAD WITH KEY CM01 MATLS SCIENCE LAB

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN = 300.000

UPDATED WORK DURATION AT SP STA 300.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 17 CM01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	300.0

PAYLOAD WITH KEY SA02 ASTRO TELESCOPE CLUSTER

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 65.000

UPDATED WORK DURATION AT SP STA 65.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	6.500
ASTROPHSICS	65.000
S/C SYS - ELEC	3.250
S/C SYS - FLUIDS	3.250
SP STA SYS OPS	3.250

DURATION SUMMARY FOR PAYLOAD NO. 21 SA02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	65.0

PAYLOAD WITH KEY SA04 ASTROPHYSICS OBSERVATORIES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	6.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100

CREW MOD MAINT = 1.710

ADJUSTED SERVICING TIME FOR 23 SA04 38.5 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	15.278
S/C SYS - DATA	40.774
S/C SYS - ELEC	10.555
S/C SYS - MECH	29.524
S/C SYS - FLUIDS	8.513
SP STA SYS OPS	41.723
EVA SERVICE TECH	14.238
TMS PILOT	50.921

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 23 SA04 IN MANDAYS/YR

SERVICING OPERATIONS	38.5
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CC05 RECONFIGURABLE COMM. SATELLITE

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 28 CC05 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM05 CONT FLOW ELEC- TROPH PLATFORM

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

ADJUSTED SERVICING TIME FOR 29 CM05 0.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 29 CM05 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM06 CONTINUOUS FLOW ELECTRO RESUPP

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	48.000
TEST & C/O	=	1.944
TMS LAUNCH	=	0.328
TMS OPS	=	12.000
TMS CREW OPS	=	12.000
TMS CAPTURE/BRTH	=	0.168
TMS MAINT/REFUEL	=	4.400
CREW MOD MAINT	=	6.840

ADJUSTED SERVICING TIME FOR 30 CM06 179.9 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	74.071
S/C SYS - DATA	139.339
S/C SYS - ELEC	67.418
S/C SYS - MECH	138.400
S/C SYS - FLUIDS	56.806
SP STA SYS OPS	168.336
EVA SERVICE TECH	56.952
TMS PILOT	304.483

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 30 CM06 IN MANDAYS/YR

SERVICING OPERATIONS	179.9
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM07 GLASS PROC PLANT

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 50.000

UPDATED WORK DURATION AT SP STA 50.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 31 CM07 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 50.0

PAYLOAD WITH KEY CM08 GLASSPROC OPTICA LFIBERS RESUPP

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 8.000

UPDATED WORK DURATION AT SP STA 8.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 32 CM08 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 8.0

PAYLOAD WITH KEY OT01 LOW INCL STA MODULE DEL

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 33 OT01 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 67.200

SP STA SYS OPS 470.400

EVA CRANE OP 67.200

EVA SERVICE TECH 67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 33 OT01 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT02 LOW INCL STA RESUPPLY

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 34 OT02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY TP01 PROP TRANSFER & STORAGE

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 10.000

UPDATED WORK DURATION AT SP STA 10.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 2.000

ENGINEERING 10.000

S/C SYS - DATA 1.500

S/C SYS - ELEC 0.500

S/C SYS - MECH	0.500
S/C SYS - FLUIDS	2.000
SP STA SYS OPS	1.000
EVA CRANE OP	0.500
EVA SERVICE TECH	0.500
MANNED OTV PILOT	1.500

DURATION SUMMARY FOR PAYLOAD NO. 37 TP01 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 10.0

PAYLOAD WITH KEY TS02 TECH DEVEL CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 20.000

UPDATED WORK DURATION AT SP STA 20.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	4.000
ENGINEERING	20.000
S/C SYS - DATA	3.000
S/C SYS - ELEC	1.000
S/C SYS - MECH	1.000
S/C SYS - FLUIDS	4.000
SP STA SYS OPS	2.000
EVA CRANE OP	1.000
EVA SERVICE TECH	1.000
MANNED OTV PILOT	3.000

DURATION SUMMARY FOR PAYLOAD NO. 45 TS02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 20.0

SKILL MIX SUMMARIES LOW INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	15.3	19.3	0.0	0.0	74.1	0.0	0.0	0.0	0.0	6.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	128.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	65.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	40.8	0.0	0.0	17.5	139.3	0.0	8.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	10.6	9.7	0.0	19.7	67.4	0.0	5.6	0.0	0.0	4.5	0.8	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	29.5	0.0	0.0	18.0	138.4	0.0	5.6	0.0	0.0	1.5	0.6	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	8.5	9.7	0.0	16.7	56.8	0.0	5.1	0.0	0.0	1.5	0.6	0.0	0.0	0.0	0.0
SP STA SYS OPS	0.0	41.7	9.7	0.0	34.6	168.3	0.0	31.1	0.0	0.0	6.0	0.5	1.6	0.0	0.0	0.0
EVA CRANE OP	0.0	0.0	0.0	0.0	28.8	0.0	0.0	10.7	2.5	0.0	3.0	3.4	41.8	470.4	0.0	0.0
EVA SERVICE TECH	0.0	14.2	0.0	0.0	36.0	57.0	0.0	9.5	2.5	0.0	1.5	1.4	30.2	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	29.7	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	50.9	0.0	0.0	0.0	304.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
453.	1283.	76.	776.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	181.8
MED/BIO RESEARCH	128.0
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	0.0
ENGINEERING	30.0
ASTROPHSICS	65.0
S/C SYS - DATA	211.3
S/C SYS - ELEC	115.0
S/C SYS - MECH	193.6
S/C SYS - FLUIDS	104.9
SP STA SYS OPS	806.6
EVA CRANE OP	142.4
EVA SERVICE TECH	219.6
MANNED OTV PILOT	34.2
TMS PILOT	355.4
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 7.1 PEOPLE

SKILL MIX SUMMARIES HIGH INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***	***COMMERC MISSIONS***	***TECH DEV MISSIONS**	****OPER SUPPORT*****

ORIGINAL PAGE IS
OF POOR QUALITY

	OPS SERV		MSN OP	CONST	OPS SERV		MSN OP	CONST	OPS SERV		MSN OP	CONST	OPS SERV		MSN OP	CONST
NO SPECIAL SKILL	0.0	0.5	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	67.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	2.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	0.0	3.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	0.2	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	0.1	3.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SP STA SYS OPS	5.0	4.2	3.3	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EVA CRANE OP	5.0	1.8	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.6	470.4	0.0	0.0
EVA SERVICE TECH	5.0	1.8	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
TMS PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP COMMERCIAL	TECH DEV	OPS SUPPORT
118.	0.	0. 705.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	74.4
MED/BIO RESEARCH	0.0
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	0.0
ENGINEERING	0.0
ASTROPHSICS	67.0
S/C SYS - DATA	2.9
S/C SYS - ELEC	3.9
S/C SYS - MECH	0.7
S/C SYS - FLUIDS	4.0
SP STA SYS OPS	499.3
EVA CRANE OP	85.8
EVA SERVICE TECH	85.2
MANNED OTV PILOT	0.0
TMS PILOT	0.0
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 2.3 PEOPLE

LOW INCLINATION

DURATION SUMMARY FOR YEAR 1992 IN MANDAYS/YR

STS OPERATIONS	30.5
CONSTRUCTION	17.3
OTV OPERATIONS	19.3
OTV MISSIONS	14.7
SERVICING OPERATIONS	554.4
SCIENCE & TECH DEMO	581.0

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OF POOR QUALITY

HIGH INCLINATION

DURATION SUMMARY FOR YEAR 1992 IN MANDAYS/YR

STS OPERATIONS	8.3
CONSTRUCTION	1.9
OTV OPERATIONS	0.0
OTV MISSIONS	0.0
SERVICING OPERATIONS	338.1
SCIENCE & TECH DEMO	67.0

SUMMARY OF SPACE STATION PAYLOADS THIS YEAR

KEY	TITLE	PLCODE	INCL	PK POWER	DUTY CYCLE
OT03	SPACE STATION MODULES	SSSS	98.0	15.0	100.0
OT04	HI-INCL STATION RESUPPLY	SORS	98.0	1.0	100.0
SP01	SPACE SCIENCE SUBSATELLITE	FSXX	98.0	0.0	100.0
SA01	VLBI/COSMIC RAY PKG	SPCL	98.0	2.0	100.0
SL01	HUMAN LIFE SI CARRY-ONS	SSSA	29.0	1.7	100.0
SL02	SMALL MAMMALS CARRY-ONS	SSSA	29.0	4.0	100.0
SL03	PLANT DEVEL CARRY-ONS	SSSA	29.0	0.5	100.0
CM01	MATLS SCIENCE LAB	SPXX	29.0	25.0	35.6
SA02	ASTRO TELESCOPE CLUSTER	SPXX	29.0	4.0	100.0
SA04	ASTROPHYSICS OBSERVATORIES	FMXM	29.0	1.0	100.0
CC05	RECONFIGURABLE COMM. SATELLITE	FXCM	0.0	0.0	1.9
CM05	CONT FLOW ELEC-TROPH PLATFORM	PMCL	29.0	0.0	100.0
CM06	CONTINUOUS FLOW ELECTRO RESUPP	PMXL	29.0	2.0	0.0
CM07	GLASS PROC PLANT	SPCL	29.0	10.6	100.0
CM08	GLASSPROC OPTICA	SPCL	29.0	0.0	0.0

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LFIBERS RESUPP

OT01	LOW INCL STA MODULE DEL	SSSS	29.0	20.0	100.0
OT02	LOW INCL STA RESUPPLY	SORS	29.0	0.0	100.0
TP01	PROP TRANSFER & STORAGE	SPCL	29.0	1.0	5.5
TS02	TECH DEVEL CARRY-ONS	SSSA	29.0	0.5	6.8

LOW INCLINATION

PEAK POWER	AVERAGE POWER
70.3	50.8

HIGH INCLINATION

PEAK POWER	AVERAGE POWER
18.0	18.0

RESOURCES SUMMARY FOR LOW INCLINATION SPACE STATION

INTERNAL VOLUME	11.8 CUBIC METERS
POWER	50.8 KW
NO. OF PORTS	5.

RESOURCES SUMMARY FOR HIGH INCLINATION SPACE STATION

INTERNAL VOLUME	1.0 CUBIC METERS
POWER	18.0 KW
NO. OF PORTS	1.

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POINTING & DISTURBANCE SUMMARY FOR LOW INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350
SL01	----------														
CM01						----------									
SA02	**********														
SA04	----------														
CC05							-								
CM05	----------														
CM06							-								
CM07	----------														
CM08							-								
OT01	----------														
OT02	----------														
TP01							----								
TS02							-----								

POINTING & DISTURBANCE SUMMARY FOR HIGH INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350
OT03	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
OT04	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
SP01	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
SA01	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********

* * * SPACE STATION OPERATIONS ANALYSIS FOR YEAR 1993 * * *

TYPE #1 = 1 TYPE #2 = 2

***>> FLIGHT NO. 1
NUMBER OF FLIGHTS: 1 PRIME MISSION: ASTROPHYSICS FREE-FLYER OUTCOME # IS 0 KEY IS SA03
INCLINATION IS 29.00
CODE IS FMXM
SECOND MISSION: RECONFIGURABLE COMM. SATELLITE OUTCOME # IS 0
KEY IS CC05
CODE IS FXCM

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.739

STS OPERATIONS CREW SKILL	MISSION RESULTS MANDAYS
SP STA SYS OPS	5.741
EVA CRANE OP	5.040
EVA SERVICE TECH	5.040

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 7.000

ADJ OTV OP DURATION FOR SECOND MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 19.256AWAY 14.700

SECOND CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	17.487
S/C SYS - ELEC	19.660
S/C SYS - MECH	17.970
S/C SYS - FLUIDS	16.718
SP STA SYS OPS	12.638
EVA CRANE OP	6.116
EVA SERVICE TECH	13.361

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MANNED OTV PILOT 29.660

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	19.3
OTV MISSIONS	14.7

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.140
TEST & C/O	=	3.400
MODULE MATE	=	0.152

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 9.956

SECOND CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	5.776
S/C SYS - ELEC	3.730
S/C SYS - MECH	3.730
S/C SYS - FLUIDS	3.570
SP STA SYS OPS	19.912
EVA CRANE OP	5.632
EVA SERVICE TECH	5.044

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	10.0
OTV OPERATIONS	19.3
OTV MISSIONS	14.7

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 2
NUMBER OF FLIGHTS: 1 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL
SECOND MISSION: TMS CAB DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832

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ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.999
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 8.261

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS	4.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 3
NUMBER OF FLIGHTS: 1 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL
SECOND MISSION: TMS PROP DELIV OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.999
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 8.261

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 3 IN MANDAYS/YR

STS OPERATIONS	4.0

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    CONSTRUCTION OPERATIONS       0.0
    OTV OPERATIONS                0.0
    OTV MISSIONS                  0.0

TYPE #1 =    2 TYPE #2 =    4

***>> FLIGHT NO.   4
  NUMBER OF FLIGHTS:   1 PRIME MISSION: CONTINUOUS FLOW   ELECTRO RESUPP  OUTCOME # IS    0 KEY IS CM06
 INCLINATION IS    29.00
CODE IS PMXL
SECOND MISSION: TMS DELIVERY                        OUTCOME # IS    0

                          SHUTTLE OPERATIONS

 UNADJUSTED DURATIONS
ORBITER ARRIVE   =  0.0832
ORBITER OFFLOAD  =  0.6000
ORBITER OFFLOAD  =  0.6000  (MISSION 2)
ORBITER RELOAD   =  0.6000  (MISSION 2)
ORBITER DEPART   =  0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF   1 FLIGHTS:   3.999
STS OPERATIONS   MISSION RESULTS
CREW SKILL        MANDAYS

SP STA SYS OPS       8.261

EVA CRANE OP         7.560

EVA SERVICE TECH     7.560

                        CONSTRUCTION OPERATIONS


                ***DURATION SUMMARY FORFIRST          MISSION FLIGHT NO.    4 IN MANDAYS/YR***

    STS OPERATIONS               4.0
    CONSTRUCTION OPERATIONS      0.0
    OTV OPERATIONS               0.0
    OTV MISSIONS                 0.0

TYPE #1 =    3 TYPE #2 =    2

***>> FLIGHT NO.   5
  NUMBER OF FLIGHTS:   1 PRIME MISSION: OTV MAINT TECH    DEMOS           OUTCOME # IS    0 KEY IS TP02
 INCLINATION IS    29.00
CODE IS SSCL
SECOND MISSION: CRYSTAL GROWTH    FACTORY/PLAT    OUTCOME # IS    0
KEY IS CM02
CODE IS PMCL

                          SHUTTLE OPERATIONS

 UNADJUSTED DURATIONS
ORBITER ARRIVE   =  0.0832
ORBITER OFFLOAD  =  0.6000
ORBITER OFFLOAD  =  0.6000  (MISSION 2)
ORBITER DEPART   =  0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF   1 FLIGHTS:   2.739
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STS OPERATIONS CREW SKILL	MISSION RESULTS MANDAYS
SP STA SYS OPS	5.741
EVA CRANE OP	5.040
EVA SERVICE TECH	5.040

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.200
MATE TO FIXT	=	0.056
TEST & C/O	=	0.486
MODULE MATE	=	0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.718

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	0.848
S/C SYS - ELEC	0.590
S/C SYS - MECH	0.590
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	3.436
EVA CRANE OP	1.394
EVA SERVICE TECH	1.394

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 5 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATION	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.200
MATE TO FIXT	=	0.056
TEST & C/O	=	0.486
MODULE MATE	=	0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 3.436

SECOND CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	1.697
S/C SYS - ELEC	1.180
S/C SYS - MECH	1.180

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S/C SYS - FLUIDS	1.021
SP STA SYS OPS	6.871
EVA CRANE OP	2.789
EVA SERVICE TECH	2.789

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 5 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	3.4
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 2

***>> FLIGHT NO. 6
NUMBER OF FLIGHTS: 1 PRIME MISSION: LOW INCL STA RESUPPLY OUTCOME # IS 11 KEY IS OT02
INCLINATION IS 29.00
CODE IS SORS
SECOND MISSION: CONT FLOW ELEC- TROPH PLATFORM OUTCOME # IS 0
KEY IS CM05
CODE IS PMCL

SHUTTLE OPERATIONS

*---> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911

STS OPERATIONS MISSION RESULTS CREW SKILL	MANDAYS
SP STA SYS OPS	7.998
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 6 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

UNADJUSTED DURATIONS

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SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.718
SECOND MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 0.848

S/C SYS - ELEC 0.590

S/C SYS - MECH 0.590

S/C SYS - FLUIDS 0.510

SP STA SYS OPS 3.436

EVA CRANE OP 1.394

EVA SERVICE TECH 1.394

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 6 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 1 TYPE #2 = 4

***>> FLIGHT NO. 7
NUMBER OF FLIGHTS: 1 PRIME MISSION: EARTH OBSERV PALLET OUTCOME # IS 10 KEY IS S001
INCLINATION IS 98.00
CODE IS SPCL
SECOND MISSION: SPACE STATION MODULES OUTCOME # IS 0
KEY IS OT03
CODE IS SSSS

SHUTTLE OPERATIONS

*--> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.739
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 5.741

EVA CRANE OP 5.040

EVA SERVICE TECH 5.040

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CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.350
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 2.453
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	0.848
S/C SYS - ELEC	0.590
S/C SYS - MECH	0.590
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	4.906
EVA CRANE OP	2.864
EVA SERVICE TECH	1.394

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 7 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	2.5
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 7 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	2.5
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 8
NUMBER OF FLIGHTS: 2 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 11 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL

SHUTTLE OPERATIONS

*---> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000

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ORBITER DEPART = 0.0219
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 2.958
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 6.441

EVA CRANE OP 5.040

EVA SERVICE TECH 5.040

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 8 IN MANDAYS/YR

STS OPERATIONS	3.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 9
NUMBER OF FLIGHTS: 2 PRIME MISSION: GLASSPROC OPTICA LFIBERS RESUPP OUTCOME # IS 11 KEY IS CM08
INCLINATION IS 29.00
CODE IS SPCL

SHUTTLE OPERATIONS

*--> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 2.958
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 6.441

EVA CRANE OP 5.040

EVA SERVICE TECH 5.040

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.070
TEST & C/O = 0.486
MODULE MATE = 0.152

ADJUSTED DUR FOR 2 FLIGHTS, AT SPACE STATION 4.049
FIRST MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - DATA	1.761
S/C SYS - ELEC	1.340
S/C SYS - MECH	1.340
S/C SYS - FLUIDS	1.021
SP STA SYS OPS	8.098
EVA CRANE OP	4.015
EVA SERVICE TECH	3.427

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 9 IN MANDAYS/YR

STS OPERATIONS	3.0
CONSTRUCTION OPERATIONS	4.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 10
NUMBER OF FLIGHTS: 3 PRIME MISSION: LOW INCL STA RESUPPLY OUTCOME # IS 10 KEY IS OT02
INCLINATION IS 29.00
CODE IS SORS

SHUTTLE OPERATIONS

*--> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 3 FLIGHTS: 8.216
STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
SP STA SYS OPS	17.222
EVA CRANE OP	15.120
EVA SERVICE TECH	15.120

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 10 IN MANDAYS/YR

STS OPERATIONS	8.2
CONSTRUCTION OPERATIONS	0.0

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    OTV OPERATIONS                0.0
    OTV MISSIONS                  0.0

TYPE #1 =    4 TYPE #2 =    0

***>> FLIGHT NO.  11
  NUMBER OF FLIGHTS:   2 PRIME MISSION: HI-INCL STATION   RESUPPLY        OUTCOME # IS   10 KEY IS OT04
 INCLINATION IS    98.00
CODE IS SORS

                              SHUTTLE OPERATIONS

 *--> THIS FLIGHT MANIFESTED WITH MINITANKER

 UNADJUSTED DURATIONS
ORBITER ARRIVE   =  0.0832
ORBITER OFFLOAD  =  0.6000
ORBITER RELOAD   =  0.6000
ORBITER DEPART   =  0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF   2 FLIGHTS:   5.478
STS OPERATIONS   MISSION RESULTS
CREW SKILL        MANDAYS

SP STA SYS OPS      11.481

EVA CRANE OP        10.080

EVA SERVICE TECH    10.080

                           CONSTRUCTION OPERATIONS


                 ***DURATION SUMMARY FORFIRST          MISSION FLIGHT NO.   11 IN MANDAYS/YR***

    STS OPERATIONS              5.5
    CONSTRUCTION OPERATIONS     0.0
    OTV OPERATIONS              0.0
    OTV MISSIONS                0.0

TYPE #1 =    1 TYPE #2 =    0

***>> FLIGHT NO.  12
  NUMBER OF FLIGHTS:   1 PRIME MISSION: SPACE PHYSICS     PALLET          OUTCOME # IS   11 KEY IS SP02
 INCLINATION IS    98.00
CODE IS SPCM

                              SHUTTLE OPERATIONS

 *--> THIS FLIGHT MANIFESTED WITH MINITANKER

 UNADJUSTED DURATIONS
ORBITER ARRIVE   =  0.0832
ORBITER OFFLOAD  =  0.6000
ORBITER DEPART   =  0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF   1 FLIGHTS:   1.479
STS OPERATIONS   MISSION RESULTS
CREW SKILL        MANDAYS
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SP STA SYS OPS	3.221
EVA CRANE OP	2.520
EVA SERVICE TECH	2.520

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	1.400
TEST & C/O	=	3.400
MODULE MATE	=	0.228

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 12.762

FIRST MISSION RESULTS

CREW SKILL MANDAYS

S/C SYS - DATA	5.808
S/C SYS - ELEC	3.809
S/C SYS - MECH	3.809
S/C SYS - FLUIDS	3.570
SP STA SYS OPS	25.523
EVA CRANE OP	11.243
EVA SERVICE TECH	5.363

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 12 IN MANDAYS/YR

STS OPERATIONS	1.5
CONSTRUCTION OPERATIONS	12.8
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

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PAYLOADS SERVICING ANALYSIS

PAYLOAD WITH KEY S001 EARTH OBSERV PALLET

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 150.000

UPDATED WORK DURATION AT SP STA 150.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	15.000
EARTH, OCEAN OBS	150.000
S/C SYS - ELEC	7.500
S/C SYS - FLUIDS	7.500
SP STA SYS OPS	7.500

DURATION SUMMARY FOR PAYLOAD NO. 1 S001 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	150.0

PAYLOAD WITH KEY OT03 SPACE STATION MODULES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 5 OT03 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	67.200
SP STA SYS OPS	470.400
EVA CRANE OP	67.200
EVA SERVICE TECH	67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

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SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 5 OT03 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT04 HI-INCL STATION RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 6 OT04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SP01 SPACE SCIENCE SUBSATELLITE

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
TMS MATE/DEMATE = 0.260

ADJUSTED SERVICING TIME FOR 7 SP01 2.1 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 0.510

S/C SYS - DATA 2.041

S/C SYS - MECH 0.204

S/C SYS - FLUIDS 0.102

SP STA SYS OPS 4.208

EVA CRANE OP 1.807

EVA SERVICE TECH 1.807

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SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 7 SP01 IN MANDAYS/YR

SERVICING OPERATIONS	2.1
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY SP02 SPACE PHYSICS PALLET

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
PHYSICS SCIENCE = 54.000

UPDATED WORK DURATION AT SP STA 54.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	5.400
PHYS SCI RESEARC	54.000
S/C SYS - ELEC	2.700
S/C SYS - FLUIDS	2.700
SP STA SYS OPS	2.700

DURATION SUMMARY FOR PAYLOAD NO. 8 SP02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	54.0

PAYLOAD WITH KEY SA01 VLBI/COSMIC RAY PKG

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 67.000

UPDATED WORK DURATION AT SP STA 67.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

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OF POOR QUALITY

NO SPECIAL SKILL	6.700
ASTROPHSICS	67.000
S/C SYS - ELEC	3.350
S/C SYS - FLUIDS	3.350
SP STA SYS OPS	3.350

DURATION SUMMARY FOR PAYLOAD NO. 9 SA01 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 67.0

PAYLOAD WITH KEY SL01 HUMAN LIFE SI CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 73.000

UPDATED WORK DURATION AT SP STA 73.0 WORK DAYS

RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	7.300
MED/BIO RESEARCH	73.000
S/C SYS - ELEC	3.650
S/C SYS - FLUIDS	3.650
SP STA SYS OPS	3.650

DURATION SUMMARY FOR PAYLOAD NO. 11 SL01 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 73.0

PAYLOAD WITH KEY SL02 SMALL MAMMALS CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 41.000

UPDATED WORK DURATION AT SP STA 41.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	4.100
MED/BIO RESEARCH	41.000
S/C SYS - ELEC	2.050
S/C SYS - FLUIDS	2.050
SP STA SYS OPS	2.050

DURATION SUMMARY FOR PAYLOAD NO. 12 SL02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	41.0

PAYLOAD WITH KEY SL03 PLANT DEVEL CARRY-ONS

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 14.000

UPDATED WORK DURATION AT SP STA 14.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	1.400
MED/BIO RESEARCH	14.000
S/C SYS - ELEC	0.700
S/C SYS - FLUIDS	0.700
SP STA SYS OPS	0.700

DURATION SUMMARY FOR PAYLOAD NO. 13 SL03 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	14.0

PAYLOAD WITH KEY CM01 MATLS SCIENCE LAB

BEST AVAILABLE COPY
OF POOR QUALITY

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 300.000

UPDATED WORK DURATION AT SP STA 300.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 17 CM01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	300.0

PAYLOAD WITH KEY CM02 CRYSTAL GROWTH FACTORY/PLAT

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	36.000
TEST & C/O	=	1.944
TMS LAUNCH	=	0.328
TMS OPS	=	12.000
TMS CREW OPS	=	12.000
TMS CAPTURE/BRTH	=	0.168
TMS MAINT/REFUEL	=	4.400
CREW MOD MAINT	=	6.840

ADJUSTED SERVICING TIME FOR 18 CM02 154.7 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	61.471
S/C SYS - DATA	126.739
S/C SYS - ELEC	54.818
S/C SYS - MECH	125.800
S/C SYS - FLUIDS	44.206
SP STA SYS OPS	143.136
EVA SERVICE TECH	56.952
TMS PILOT	254.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 18 CM02 IN MANDAYS/YR

SERVICING OPERATIONS 154.7
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SA02 ASTRO TELESCOPE CLUSTER

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 65.000

UPDATED WORK DURATION AT SP STA 65.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 6.500

ASTROPHSICS 65.000

S/C SYS - ELEC 3.250

S/C SYS - FLUIDS 3.250

SP STA SYS OPS 3.250

DURATION SUMMARY FOR PAYLOAD NO. 21 SA02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 65.0

PAYLOAD WITH KEY SA03 ASTROPHYSICS FREE-FLYER

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 2.000
TEST & C/O = 3.400
TMS LAUNCH = 0.082
TMS OPS = 3.000
TMS CREW OPS = 3.000
TMS CAPTURE/BRTH = 0.042
TMS MAINT/REFUEL = 1.100
CREW MOD MAINT = 1.710

ADJUSTED SERVICING TIME FOR 22 SA03 30.1 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	11.078
S/C SYS - DATA	36.574
S/C SYS - ELEC	6.355
S/C SYS - MECH	25.324
S/C SYS - FLUIDS	4.313
SP STA SYS OPS	33.323
EVA SERVICE TECH	14.238
TMS PILOT	34.121

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 22 SA03 IN MANDAYS/YR

SERVICING OPERATIONS 30.1
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SA04 ASTROPHYSICS OBSERVATORIES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	6.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 23 SA04 38.5 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.278
S/C SYS - DATA	40.774
S/C SYS - ELEC	10.555
S/C SYS - MECH	29.524
S/C SYS - FLUIDS	8.513
SP STA SYS OPS	41.723
EVA SERVICE TECH	14.238
TMS PILOT	50.921

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 23 SA04 IN MANDAYS/YR

SERVICING OPERATIONS 38.5
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC05 RECONFIGURABLE COMM. SATELLITE

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 28 CC05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM05 CONT FLOW ELEC- TROPH PLATFORM

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

ADJUSTED SERVICING TIME FOR 29 CM05 0.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 29 CM05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM06 CONTINUOUS FLOW ELECTRO RESUPP

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 48.000
TEST & C/O = 1.944
TMS LAUNCH = 0.328
TMS OPS = 12.000
TMS CREW OPS = 12.000
TMS CAPTURE/BRTH = 0.168

TMS MAINT/REFUEL = 4.400
CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 30 CM06 179.9 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	74.071
S/C SYS - DATA	139.339
S/C SYS - ELEC	67.418
S/C SYS - MECH	138.400
S/C SYS - FLUIDS	56.806
SP STA SYS OPS	168.336
EVA SERVICE TECH	56.952
TMS PILOT	304.483

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 30 CM06 IN MANDAYS/YR

SERVICING OPERATIONS	179.9
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM07 GLASS PROC PLANT

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 50.000

UPDATED WORK DURATION AT SP STA 50.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 31 CM07 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	50.0

PAYLOAD WITH KEY CM08 GLASSPROC OPTICA LFIBERS RESUPP

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 8.000

UPDATED WORK DURATION AT SP STA 8.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 32 CM08 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 8.0

PAYLOAD WITH KEY OT01 LOW INCL STA MODULE DEL

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 33 OT01 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 67.200

SP STA SYS OPS 470.400

EVA CRANE OP 67.200

EVA SERVICE TECH 67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 33 OT01 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT02 LOW INCL STA RESUPPLY

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 34 OT02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY TP02 OTV MAINT TECH DEMOS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 10.000

UPDATED WORK DURATION AT SP STA 10.0 WORK DAYS

RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	2.000
ENGINEERING	10.000
S/C SYS - DATA	1.500
S/C SYS - ELEC	0.500
S/C SYS - MECH	0.500
S/C SYS - FLUIDS	2.000
SP STA SYS OPS	1.000
EVA CRANE OP	0.500
EVA SERVICE TECH	0.500
MANNED OTV PILOT	1.500

DURATION SUMMARY FOR PAYLOAD NO. 38 TP02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	10.0

PAYLOAD WITH KEY TS02 TECH DEVEL CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 20.000

UPDATED WORK DURATION AT SP STA 20.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	4.000
ENGINEERING	20.000
S/C SYS - DATA	3.000
S/C SYS - ELEC	1.000
S/C SYS - MECH	1.000
S/C SYS - FLUIDS	4.000
SP STA SYS OPS	2.000
EVA CRANE OP	1.000
EVA SERVICE TECH	1.000
MANNED OTV PILOT	3.000

DURATION SUMMARY FOR PAYLOAD NO. 45 TS02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	20.0

SKILL MIX SUMMARIES LOW INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	26.4	19.3	0.0	0.0	135.5	0.0	0.0	0.0	0.0	6.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	128.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	65.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	77.3	0.0	0.0	17.5	266.1	0.0	9.2	0.0	0.0	4.5	1.7	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	16.9	9.7	0.0	19.7	122.2	0.0	6.2	0.0	0.0	1.5	1.2	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	54.8	9.0	0.0	18.0	264.2	0.0	6.2	0.0	0.0	1.5	1.2	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	12.8	9.7	0.0	16.7	101.0	0.0	5.6	0.0	0.0	6.0	1.0	0.0	0.0	0.0	0.0
SP STA SYS OPS	5.0	75.0	9.7	0.0	34.6	311.5	0.0	34.9	2.5	0.0	3.0	6.9	44.8	470.4	0.0	0.0
EVA CRANE OP	5.0	0.0	0.0	0.0	28.8	0.0	0.0	12.4	2.5	0.0	1.5	2.8	35.3	67.2	0.0	0.0

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EVA SERVICE TECH	5.0	28.5	0.0	0.0	36.0	113.9	0.0	11.3	2.5	0.0	1.5	2.8	35.3	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	29.7	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	85.0	0.0	0.0	0.0	558.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
633.	2160.	85.	787.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	254.4
MED/BIO RESEARCH	128.0
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	0.0
ENGINEERING	30.0
ASTROPHSICS	65.0
S/C SYS - DATA	376.3
S/C SYS - ELEC	177.4
S/C SYS - MECH	345.9
S/C SYS - FLUIDS	152.8
SP STA SYS OPS	998.3
EVA CRANE OP	155.6
EVA SERVICE TECH	304.0
MANNED OTV PILOT	34.2
TMS PILOT	643.6
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 10.0 PEOPLE

SKILL MIX SUMMARIES HIGH INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	0.5	27.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	54.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	150.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	67.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	2.0	0.0	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	0.0	13.6	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	0.2	0.0	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	0.1	13.6	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SP STA SYS OPS	5.0	4.2	13.6	30.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EVA CRANE OP	5.0	1.8	0.0	14.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.4	470.4	0.0	0.0
EVA SERVICE TECH	5.0	1.8	0.0	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.6	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.6	67.2	0.0	0.0
TMS PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT

ORIGINAL PAGE IS
OF POOR QUALITY

435. 0. 0. 713.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	94.8
MED/BIO RESEARCH	0.0
PHYS SCI RESEARC	54.0
EARTH, OCEAN OBS	150.0
ENGINEERING	0.0
ASTROPHSICS	67.0
S/C SYS - DATA	8.7
S/C SYS - ELEC	17.9
S/C SYS - MECH	4.6
S/C SYS - FLUIDS	17.7
SP STA SYS OPS	539.0
EVA CRANE OP	100.8
EVA SERVICE TECH	93.4
MANNED OTV PILOT	0.0
TMS PILOT	0.0
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 3.1 PEOPLE

LOW INCLINATION

DURATION SUMMARY FOR YEAR 1993 IN MANDAYS/YR

STS OPERATIONS	35.5
CONSTRUCTION	20.9
OTV OPERATIONS	19.3
OTV MISSIONS	14.7
SERVICING OPERATIONS	739.3
SCIENCE & TECH DEMO	581.0

HIGH INCLINATION

DURATION SUMMARY FOR YEAR 1993 IN MANDAYS/YR

STS OPERATIONS	9.7
CONSTRUCTION	15.2
OTV OPERATIONS	0.0
OTV MISSIONS	0.0
SERVICING OPERATIONS	338.1
SCIENCE & TECH DEMO	271.0

SUMMARY OF SPACE STATION PAYLOADS THIS YEAR

KEY	TITLE	PLCODE	INCL	PK POWER	DUTY CYCLE
S001	EARTH OBSERV PALLET	SPCL	98.0	3.5	82.2
OT03	SPACE STATION	SSSS	98.0	15.0	100.0

ORIGINAL PAGE IS
OF POOR QUALITY

	MODULES				
OT04	HI-INCL STATION RESUPPLY	SORS	98.0	1.0	100.0
SP01	SPACE SCIENCE SUBSATELLITE	FSXX	98.0	0.0	100.0
SP02	SPACE PHYSICS PALLET	SPCM	98.0	10.0	9.9
SA01	VLBI/COSMIC RAY PKG	SPCL	98.0	2.0	100.0
SL01	HUMAN LIFE SI CARRY-ONS	SSSA	29.0	1.7	100.0
SL02	SMALL MAMMALS CARRY-ONS	SSSA	29.0	4.0	100.0
SL03	PLANT DEVEL CARRY-ONS	SSSA	29.0	0.5	100.0
CM01	MATLS SCIENCE LAB	SPXX	29.0	25.0	35.6
CM02	CRYSTAL GROWTH FACTORY/PLAT	PMCL	29.0	0.0	100.0
SA02	ASTRO TELESCOPE CLUSTER	SPXX	29.0	4.0	100.0
SA03	ASTROPHYSICS FREE-FLYER	FMXM	29.0	0.0	100.0
SA04	ASTROPHYSICS OBSERVATORIES	FMXM	29.0	1.0	100.0
CC05	RECONFIGURABLE COMM. SATELLITE	FXCM	0.0	0.0	1.9
CM05	CONT FLOW ELEC-TROPH PLATFORM	PMCL	29.0	0.0	100.0
CM06	CONTINUOUS FLOW ELECTRO RESUPP	PMXL	29.0	2.0	9.0
CM07	GLASS PROC PLANT	SPCL	29.0	10.6	100.0
CM08	GLASSPROC OPTICA LFIBERS RESUPP	SPCL	29.0	0.0	0.0
OT01	LOW INCL STA MODULE DEL	SSSS	29.0	20.0	100.0
OT02	LOW INCL STA RESUPPLY	SORS	29.0	0.0	100.0
TP02	OTV MAINT TECH	SSCL	29.0	1.0	5.5

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DEMOS

TS02	TECH DEVEL CARRY-ONS	SSSA	29.0	0.5	6.8

LOW INCLINATION

PEAK POWER	AVERAGE POWER
70.3	50.8

HIGH INCLINATION

PEAK POWER	AVERAGE POWER
31.5	21.9

RESOURCES SUMMARY FOR LOW INCLINATION SPACE STATION

INTERNAL VOLUME	11.8 CUBIC METERS
POWER	50.8 KW
NO. OF PORTS	4.

RESOURCES SUMMARY FOR HIGH INCLINATION SPACE STATION

INTERNAL VOLUME	5.5 CUBIC METERS
POWER	21.9 KW
NO. OF PORTS	3.

POINTING & DISTURBANCE SUMMARY FOR LOW INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350
SL01	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM01						----------	----------	----------							
CM02	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
SA02	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********
SA03	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
SA04	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CC05							-								
CM05	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM06							-								
CM07	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM08							-								
OT01	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
OT02	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
TP02							----								
TS02							-----								

POINTING & DISTURBANCE SUMMARY FOR HIGH INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350
S001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OT03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OT04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SP02	0	0	0	0	0	0	0								
SA01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

* * * SPACE STATION OPERATIONS ANALYSIS FOR YEAR 1994 * * *

TYPE #1 = 3 TYPE #2 = 2

***>> FLIGHT NO. 1
NUMBER OF FLIGHTS: 1 PRIME MISSION: **SATELLITE ASSY & SERVICE OUTCOME # IS 0 KEY IS TS01
INCLINATION IS 29.00
CODE IS SSCL
SECOND MISSION: CRYSTAL GROWTH RESUP-1 OUTCOME # IS 0
KEY IS CM03
CODE IS PMXX

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.651

STS OPERATIONS CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - FLUIDS	1.661
SP STA SYS OPS	7.555
EVA CRANE OP	5.040
EVA SERVICE TECH	5.040

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.718

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	0.848
S/C SYS - ELEC	0.590
S/C SYS - MECH	0.590
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	3.436
EVA CRANE OP	1.394
EVA SERVICE TECH	1.394

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DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 2

***>> FLIGHT NO. 2
NUMBER OF FLIGHTS: 1 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL
SECOND MISSION: RECONFIGURABLE COMM. SATELLITE OUTCOME # IS 0
KEY IS CC05
CODE IS FXCM.

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.739
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	5.741
EVA CRANE OP	5.040
EVA SERVICE TECH	5.040

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 7.000

ADJ OTV OP DURATION FOR SECOND MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 19.256AWAY 14.700
SECOND MISSION RESULTS

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CREW SKILL	MANDAYS
S/C SYS - DATA	17.487
S/C SYS - ELEC	19.660
S/C SYS - MECH	17.970
S/C SYS - FLUIDS	16.718
SP STA SYS OPS	12.638
EVA CRANE OP	6.116
EVA SERVICE TECH	13.361
MANNED OTV PILOT	29.660

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	19.3
OTV MISSIONS	14.7

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.140
TEST & C/O	=	3.400
MODULE MATE	=	0.152

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 9.956

SECOND MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - DATA	5.776
S/C SYS - ELEC	3.730
S/C SYS - MECH	3.730
S/C SYS - FLUIDS	3.570
SP STA SYS OPS	19.912
EVA CRANE OP	5.632
EVA SERVICE TECH	5.044

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS	2.7

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    CONSTRUCTION OPERATIONS      10.0
    OTV OPERATIONS               19.3
    OTV MISSIONS                 14.7

TYPE #1 =    2 TYPE #2 =    4

***>> FLIGHT NO.   3
  NUMBER OF FLIGHTS:   1 PRIME MISSION: CONTINUOUS FLOW   ELECTRO RESUPP  OUTCOME # IS    0 KEY IS CM06
 INCLINATION IS    29.00
CODE IS PMXL
SECOND MISSION: TMS CAB DELIVERY                    OUTCOME # IS    0

                          SHUTTLE OPERATIONS

 UNADJUSTED DURATIONS
ORBITER ARRIVE   =  0.0832
ORBITER OFFLOAD  =  0.6000
ORBITER OFFLOAD  =  0.6000  (MISSION 2)
ORBITER RELOAD   =  0.6000  (MISSION 2)
ORBITER DEPART   =  0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF   1 FLIGHTS:   3.999
STS OPERATIONS   MISSION RESULTS
CREW SKILL        MANDAYS

SP STA SYS OPS       8.261

EVA CRANE OP         7.560

EVA SERVICE TECH     7.560

                       CONSTRUCTION OPERATIONS


              ***DURATION SUMMARY FORFIRST          MISSION FLIGHT NO.    3 IN MANDAYS/YR***

    STS OPERATIONS             4.0
    CONSTRUCTION OPERATIONS    0.0
    OTV OPERATIONS             0.0
    OTV MISSIONS               0.0

TYPE #1 =    2 TYPE #2 =    1

***>> FLIGHT NO.   4
  NUMBER OF FLIGHTS:   1 PRIME MISSION: CONTINUOUS FLOW   ELECTRO RESUPP  OUTCOME # IS    0 KEY IS CM06
 INCLINATION IS    29.00
CODE IS PMXL
SECOND MISSION: CENTRIFUGE      (ADD TO LSRF)   OUTCOME # IS    0
KEY IS SL05
CODE IS SSCL

                          SHUTTLE OPERATIONS

 UNADJUSTED DURATIONS
ORBITER ARRIVE   =  0.0416
ORBITER OFFLOAD  =  0.6000
ORBITER OFFLOAD  =  0.6000  (MISSION 2)
ORBITER DEPART   =  0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF   1 FLIGHTS:   2.651
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STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	5.478
EVA CRANE OP	5.040
EVA SERVICE TECH	5.040

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 4 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.200
MATE TO FIXT	=	0.056
TEST & C/O	=	0.486
MODULE MATE	=	0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.718
SECOND MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	0.848
S/C SYS - ELEC	0.590
S/C SYS - MECH	0.590
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	3.436
EVA CRANE OP	1.394
EVA SERVICE TECH	1.394

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 4 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 2

***>> FLIGHT NO. 5
NUMBER OF FLIGHTS: 2 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL

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SECOND MISSION: CRYSTAL GROWTH RESUP-1 OUTCOME # IS 0
KEY IS CM03
CODE IS PMXX

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 5.478
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 11.481

EVA CRANE OP 10.080

EVA SERVICE TECH 10.080

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 5 IN MANDAYS/YR

STS OPERATIONS	5.5
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 5 IN MANDAYS/YR

STS OPERATIONS	5.5
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 6
NUMBER OF FLIGHTS: 2 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 11 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL
SECOND MISSION: TMS PROP DELIV OUTCOME # IS 0

SHUTTLE OPERATIONS

*--> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210

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ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 7.998
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 16.521

EVA CRANE OP 15.120

EVA SERVICE TECH 15.120

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 6 IN MANDAYS/YR

STS OPERATIONS	8.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 1

***>> FLIGHT NO. 7
NUMBER OF FLIGHTS: 1 PRIME MISSION: LOW INCL STA RESUPPLY OUTCOME # IS 11 KEY IS OT02
INCLINATION IS 29.00
CODE IS SORS
SECOND MISSION: LIFESCIENCES RES FAC OUTCOME # IS 0
KEY IS SL04
CODE IS SPXX

SHUTTLE OPERATIONS

*--> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 7.998

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 7 IN MANDAYS/YR

STS OPERATIONS 3.9

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CONSTRUCTION OPERATIONS 0.0
OTV OPERATIONS 0.0
OTV MISSIONS 0.0

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 7 IN MANDAYS/YR

STS OPERATIONS 3.9
CONSTRUCTION OPERATIONS 0.0
OTV OPERATIONS 0.0
OTV MISSIONS 0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 8
NUMBER OF FLIGHTS: 2 PRIME MISSION: GLASSPROC OPTICA LFIBERS RESUPP OUTCOME # IS 10 KEY IS CM08
INCLINATION IS 29.00
CODE IS SPCL

SHUTTLE OPERATIONS

*---> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 2.958
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 6.441

EVA CRANE OP 5.040

EVA SERVICE TECH 5.040

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.070
TEST & C/O = 0.486
MODULE MATE = 0.152

ADJUSTED DUR FOR 2 FLIGHTS, AT SPACE STATION 4.049
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 1.761

S/C SYS - ELEC 1.340

S/C SYS - MECH 1.340

S/C SYS - FLUIDS 1.021

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SP STA SYS OPS	8.098
EVA CRANE OP	4.015
EVA SERVICE TECH	3.427

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 8 IN MANDAYS/YR

STS OPERATIONS	3.0
CONSTRUCTION OPERATIONS	4.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 9
NUMBER OF FLIGHTS: 3 PRIME MISSION: LOW INCL STA RESUPPLY OUTCOME # IS 0 KEY IS OT02
INCLINATION IS 29.00
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS

ORBITER ARRIVE	=	0.0832
ORBITER OFFLOAD	=	0.6000
ORBITER RELOAD	=	0.6000
ORBITER DEPART	=	0.0210

ADJ STS DURATION AT SP STA FOR TOTAL OF 3 FLIGHTS: 8.216

STS OPERATIONS MISSION RESULTS CREW SKILL	MANDAYS
SP STA SYS OPS	17.222
EVA CRANE OP	15.120
EVA SERVICE TECH	15.120

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 9 IN MANDAYS/YR

STS OPERATIONS	8.2
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 10
NUMBER OF FLIGHTS: 2 PRIME MISSION: HI-INCL STATION RESUPPLY OUTCOME # IS 0 KEY IS OT04
INCLINATION IS 98.00
CODE IS SORS

SHUTTLE OPERATIONS

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UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 5.478
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 11.481

EVA CRANE OP 10.080

EVA SERVICE TECH 10.080

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 10 IN MANDAYS/YR

STS OPERATIONS	5.5
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

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PAYLOADS SERVICING ANALYSIS

PAYLOAD WITH KEY S001 EARTH OBSERV PALLET

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 150.000

UPDATED WORK DURATION AT SP STA 150.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	15.000
EARTH, OCEAN OBS	150.000
S/C SYS - ELEC	7.500
S/C SYS - FLUIDS	7.500
SP STA SYS OPS	7.500

DURATION SUMMARY FOR PAYLOAD NO. 1 S001 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	150.0

PAYLOAD WITH KEY OT03 SPACE STATION MODULES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 5 OT03 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	67.200
SP STA SYS OPS	470.400
EVA CRANE OP	67.200
EVA SERVICE TECH	67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 5 OT03 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT04 HI-INCL STATION RESUPPLY

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 6 OT04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SP02 SPACE PHYSICS PALLET

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
PHYSICS SCIENCE = 54.000

UPDATED WORK DURATION AT SP STA 54.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	5.400
PHYS SCI RESEARC	54.000
S/C SYS - ELEC	2.700
S/C SYS - FLUIDS	2.700
SP STA SYS OPS	2.700

DURATION SUMMARY FOR PAYLOAD NO. 8 SP02 IN MANDAYS/YR

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SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 54.0

PAYLOAD WITH KEY SA01 VLBI/COSMIC RAY PKG

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 67.000

UPDATED WORK DURATION AT SP STA 67.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 6.700

ASTROPHSICS 67.000

S/C SYS - ELEC 3.350

S/C SYS - FLUIDS 3.350

SP STA SYS OPS 3.350

DURATION SUMMARY FOR PAYLOAD NO. 9 SA01 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 67.0

PAYLOAD WITH KEY SL01 HUMAN LIFE SI CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 73.000

UPDATED WORK DURATION AT SP STA 73.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 7.300

MED/BIO RESEARCH 73.000

S/C SYS - ELEC 3.650

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S/C SYS - FLUIDS	3.650
SP STA SYS OPS	3.650

DURATION SUMMARY FOR PAYLOAD NO. 11 SL01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	73.0

PAYLOAD WITH KEY SL02 SMALL MAMMALS CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 41.000

UPDATED WORK DURATION AT SP STA 41.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	4.100
MED/BIO RESEARCH	41.000
S/C SYS - ELEC	2.050
S/C SYS - FLUIDS	2.050
SP STA SYS OPS	2.050

DURATION SUMMARY FOR PAYLOAD NO. 12 SL02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	41.0

PAYLOAD WITH KEY SL03 PLANT DEVEL CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 14.000

UPDATED WORK DURATION AT SP STA 14.0 WORK DAYS

RESEARCH MISSION RESULTS

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CREW SKILL	MANDAYS
NO SPECIAL SKILL	1.400
MED/BIO RESEARCH	14.000
S/C SYS - ELEC	0.700
S/C SYS - FLUIDS	0.700
SP STA SYS OPS	0.700

DURATION SUMMARY FOR PAYLOAD NO. 13 SL03 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 14.0

PAYLOAD WITH KEY SL04 LIFESCIENCES RES FAC

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 191.000

UPDATED WORK DURATION AT SP STA 191.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	19.100
MED/BIO RESEARCH	191.000
S/C SYS - ELEC	9.550
S/C SYS - FLUIDS	9.550
SP STA SYS OPS	9.550

DURATION SUMMARY FOR PAYLOAD NO. 14 SL04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 191.0

PAYLOAD WITH KEY SL05 CENTRIFUGE (ADD TO LSRF)

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

ORIGINAL PAGE IS
OF POOR QUALITY

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 91.000

UPDATED WORK DURATION AT SP STA 91.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 9.100

MED/BIO RESEARCH 91.000

S/C SYS - ELEC 4.550

S/C SYS - FLUIDS 4.550

SP STA SYS OPS 4.550

DURATION SUMMARY FOR PAYLOAD NO. 15 SL05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 91.0

PAYLOAD WITH KEY CM01 MATLS SCIENCE LAB

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 300.000

UPDATED WORK DURATION AT SP STA 300.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 17 CM01 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 300.0

PAYLOAD WITH KEY CM02 CRYSTAL GROWTH FACTORY/PLAT

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 36.000
TEST & C/O = 1.944
TMS LAUNCH = 0.328

ORIGINAL PAGE IS
OF POOR QUALITY

TMS OPS = 12.000
TMS CREW OPS = 12.000
TMS CAPTURE/BRTH = 0.168
TMS MAINT/REFUEL = 4.400
CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 18 CM02 154.7 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	61.471
S/C SYS - DATA	126.739
S/C SYS - ELEC	54.818
S/C SYS - MECH	125.800
S/C SYS - FLUIDS	44.206
SP STA SYS OPS	143.136
EVA SERVICE TECH	56.952
TMS PILOT	254.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 18 CM02 IN MANDAYS/YR

SERVICING OPERATIONS 154.7
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM03 CRYSTAL GROWTH RESUP-1

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 12.000
TEST & C/O = 1.458
TMS LAUNCH = 0.246
TMS OPS = 9.000
TMS CREW OPS = 9.000
TMS CAPTURE/BRTH = 0.126
TMS MAINT/REFUEL = 3.300
CREW MOD MAINT = 5.130

ADJUSTED SERVICING TIME FOR 19 CM03 84.5 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	30.353
S/C SYS - DATA	79.304
S/C SYS - ELEC	25.364

ORIGINAL PAGE IS
OF POOR QUALITY

S/C SYS - MECH	78.600
S/C SYS - FLUIDS	17.404
SP STA SYS OPS	75.852
EVA SERVICE TECH	42.714
TMS PILOT	127.562

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 19 CM03 IN MANDAYS/YR

SERVICING OPERATIONS 84.5
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SA02 ASTRO TELESCOPE CLUSTER

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 65.000

UPDATED WORK DURATION AT SP STA 65.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	6.500
ASTROPHSICS	65.000
S/C SYS - ELEC	3.250
S/C SYS - FLUIDS	3.250
SP STA SYS OPS	3.250

DURATION SUMMARY FOR PAYLOAD NO. 21 SA02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 65.0

PAYLOAD WITH KEY SA03 ASTROPHYSICS FREE-FLYER

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

ORIGINAL PAGE IS
OF POOR QUALITY

REMOTE SERVICE	=	2.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 22 SA03 30.1 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	11.078
S/C SYS - DATA	36.574
S/C SYS - ELEC	6.355
S/C SYS - MECH	25.324
S/C SYS - FLUIDS	4.313
SP STA SYS OPS	33.323
EVA SERVICE TECH	14.238
TMS PILOT	34.121

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 22 SA03 IN MANDAYS/YR

SERVICING OPERATIONS	30.1
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY SA04 ASTROPHYSICS OBSERVATORIES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	6.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 23 SA04 38.5 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.278

ORIGINAL PAGE IS
OF POOR QUALITY

S/C SYS - DATA	40.774
S/C SYS - ELEC	10.555
S/C SYS - MECH	29.524
S/C SYS - FLUIDS	8.513
SP STA SYS OPS	41.723
EVA SERVICE TECH	14.238
TMS PILOT	50.921

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 23 SA04 IN MANDAYS/YR

SERVICING OPERATIONS 38.5
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC05 RECONFIGURABLE COMM. SATELLITE

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 28 CC05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM05 CONT FLOW ELEC- TROPH PLATFORM

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

ADJUSTED SERVICING TIME FOR 29 CM05 0.0 DAYS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 29 CM05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0

SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM06 CONTINUOUS FLOW ELECTRO RESUPP

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	48.000
TEST & C/O	=	1.944
TMS LAUNCH	=	0.328
TMS OPS	=	12.000
TMS CREW OPS	=	12.000
TMS CAPTURE/BRTH	=	0.168
TMS MAINT/REFUEL	=	4.400
CREW MOD MAINT	=	6.840

ADJUSTED SERVICING TIME FOR 30 CM06 179.9 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	74.071
S/C SYS - DATA	139.339
S/C SYS - ELEC	67.418
S/C SYS - MECH	138.400
S/C SYS - FLUIDS	56.806
SP STA SYS OPS	168.336
EVA SERVICE TECH	56.952
TMS PILOT	304.483

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 30 CM06 IN MANDAYS/YR

SERVICING OPERATIONS	179.9
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM07 GLASS PROC PLANT

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	50.000

UPDATED WORK DURATION AT SP STA 50.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 31 CM07 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 50.0

PAYLOAD WITH KEY CM08 GLASSPROC OPTICA LFIBERS RESUPP

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 8.000

UPDATED WORK DURATION AT SP STA 8.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 32 CM08 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 8.0

PAYLOAD WITH KEY OT01 LOW INCL STA MODULE DEL

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 33 OT01 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 67.200

SP STA SYS OPS 470.400

EVA CRANE OP 67.200

EVA SERVICE TECH 67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 33 OT01 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT02 LOW INCL STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 34 OT02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY TS01 SATELLITE ASSY & SERVICE

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 90.000

UPDATED WORK DURATION AT SP STA 90.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	18.000
ENGINEERING	90.000
S/C SYS - DATA	13.500
S/C SYS - ELEC	4.500
S/C SYS - MECH	4.500
S/C SYS - FLUIDS	18.000
SP STA SYS OPS	9.000
EVA CRANE OP	4.500

EVA SERVICE TECH	4.500
MANNED OTV PILOT	13.500

DURATION SUMMARY FOR PAYLOAD NO. 39 TS01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	90.0

PAYLOAD WITH KEY TS02 TECH DEVEL CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 20.000

UPDATED WORK DURATION AT SP STA 20.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	4.000
ENGINEERING	20.000
S/C SYS - DATA	3.000
S/C SYS - ELEC	1.000
S/C SYS - MECH	1.000
S/C SYS - FLUIDS	4.000
SP STA SYS OPS	2.000
EVA CRANE OP	1.000
EVA SERVICE TECH	1.000
MANNED OTV PILOT	3.000

DURATION SUMMARY FOR PAYLOAD NO. 45 TS02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	20.0

SKILL MIX SUMMARIES LOW INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***	***COMMERC MISSIONS***	***TECH DEV MISSIONS**	****OPER SUPPORT*****

	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	26.4	47.5	0.0	0.0	165.9	0.0	0.0	0.0	0.0	22.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	410.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	110.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	65.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	77.3	0.0	0.8	17.5	345.4	0.0	7.5	0.0	0.0	16.5	0.8	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	16.9	23.8	0.6	19.7	147.6	0.0	5.1	0.0	0.0	5.5	0.6	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	54.8	0.0	0.6	18.0	342.8	0.0	5.1	0.0	0.0	5.5	0.6	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	12.8	23.8	0.5	16.7	118.4	0.0	4.6	0.0	0.0	22.0	0.5	1.7	0.0	0.0	0.0
SP STA SYS OPS	5.0	75.0	23.8	3.4	44.7	387.3	0.0	28.0	2.5	0.0	11.0	3.4	47.1	470.4	0.0	0.0
EVA CRANE OP	5.0	0.0	0.0	1.4	38.9	0.0	0.0	9.6	2.5	0.0	5.5	1.4	35.3	67.2	0.0	0.0
EVA SERVICE TECH	5.0	28.5	0.0	1.4	46.1	156.6	0.0	8.5	2.5	0.0	5.5	1.4	35.3	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	29.7	0.0	0.0	0.0	0.0	0.0	16.5	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	85.0	0.0	0.0	0.0	686.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
994.	2650.	236.	791.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	329.0
MED/BIO RESEARCH	410.0
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	0.0
ENGINEERING	110.0
ASTROPHSICS	65.0
S/C SYS - DATA	465.9
S/C SYS - ELEC	219.7
S/C SYS - MECH	427.4
S/C SYS - FLUIDS	201.0
SP STA SYS OPS	1101.7
EVA CRANE OP	166.9
EVA SERVICE TECH	358.0
MANNED OTV PILOT	46.2
TMS PILOT	771.2
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 12.8 PEOPLE

SKILL MIX SUMMARIES HIGH INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	0.0	27.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	54.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	150.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	67.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

S/C SYS - ELEC	0.0	0.0	13.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	0.0	13.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SP STA SYS OPS	0.0	0.0	13.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EVA CRANE OP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.5	470.4	0.0	0.0
EVA SERVICE TECH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
TMS PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
339.	0.	0.	704.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	94.3
MED/BIO RESEARCH	0.0
PHYS SCI RESEARC	54.0
EARTH, OCEAN OBS	150.0
ENGINEERING	0.0
ASTROPHSICS	67.0
S/C SYS - DATA	0.0
S/C SYS - ELEC	13.6
S/C SYS - MECH	0.0
S/C SYS - FLUIDS	13.6
SP STA SYS OPS	495.4
EVA CRANE OP	77.3
EVA SERVICE TECH	77.3
MANNED OTV PILOT	0.0
TMS PILOT	0.0
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 2.9 PEOPLE

LOW INCLINATION

DURATION SUMMARY FOR YEAR 1994 IN MANDAYS/YR

STS OPERATIONS	40.6
CONSTRUCTION	17.4
OTV OPERATIONS	19.3
OTV MISSIONS	14.7
SERVICING OPERATIONS	823.8
SCIENCE & TECH DEMO	943.0

HIGH INCLINATION

DURATION SUMMARY FOR YEAR 1994 IN MANDAYS/YR

STS OPERATIONS	5.5
CONSTRUCTION	0.0

OTV OPERATIONS	0.0
OTV MISSIONS	0.0
SERVICING OPERATIONS	336.0
SCIENCE & TECH DEMO	271.0

SUMMARY OF SPACE STATION PAYLOADS THIS YEAR

KEY	TITLE	PLCODE	INCL	PK POWER	DUTY CYCLE
S001	EARTH OBSERV PALLET	SPCL	98.0	3.5	82.2
OT03	SPACE STATION MODULES	SSSS	98.0	15.0	100.0
OT04	HI-INCL STATION RESUPPLY	SORS	98.0	1.0	100.0
SP02	SPACE PHYSICS PALLET	SPCM	98.0	10.0	9.9
SA01	VLBI/COSMIC RAY PKG	SPCL	98.0	2.0	100.0
SL01	HUMAN LIFE SI CARRY-ONS	SSSA	29.0	1.7	100.0
SL02	SMALL MAMMALS CARRY-ONS	SSSA	29.0	4.0	100.0
SL03	PLANT DEVEL CARRY-ONS	SSSA	29.0	0.5	100.0
SL04	LIFESCIENCES RES FAC	SPXX	29.0	12.2	100.0
SL05	CENTRIFUGE (ADD TO LSRF)	SSCL	29.0	4.0	100.0
CM01	MATLS SCIENCE LAB	SPXX	29.0	25.0	35.6
CM02	CRYSTAL GROWTH FACTORY/PLAT	PMCL	29.0	0.0	100.0
CM03	CRYSTAL GROWTH RESUP-1	PMXX	29.0	0.0	0.5
SA02	ASTRO TELESCOPE CLUSTER	SPXX	29.0	4.0	100.0
SA03	ASTROPHYSICS FREE-FLYER	FMXM	29.0	0.0	100.0
SA04	ASTROPHYSICS OBSERVATORIES	FMXM	29.0	1.0	100.0
CC05	RECONFIGURABLE COMM. SATELLITE	FXCM	0.0	0.0	1.9

CM05	CONT FLOW ELEC-TROPH PLATFORM	PMCL	29.0	0.0	100.0
CM06	CONTINUOUS FLOW ELECTRO RESUPP	PMXL	29.0	2.0	0.0
CM07	GLASS PROC PLANT	SPCL	29.0	10.6	100.0
CM08	GLASSPROC OPTICA LFIBERS RESUPP	SPCL	29.0	0.0	0.0
OT01	LOW INCL STA MODULE DEL	SSSS	29.0	20.0	100.0
OT02	LOW INCL STA RESUPPLY	SORS	29.0	0.0	100.0
TS01	SATELLITE ASSY & SERVICE	SSCL	29.0	1.0	24.7
TS02	TECH DEVEL CARRY-ONS	SSSA	29.0	0.5	6.8

LOW INCLINATION

PEAK POWER	AVERAGE POWER
86.5	67.2

HIGH INCLINATION

PEAK POWER	AVERAGE POWER
31.5	21.9

RESOURCES SUMMARY FOR LOW INCLINATION SPACE STATION

INTERNAL VOLUME	11.8	CUBIC METERS
POWER	67.2	KW
NO. OF PORTS	5.	

RESOURCES SUMMARY FOR HIGH INCLINATION SPACE STATION

INTERNAL VOLUME	5.5	CUBIC METERS
POWER	21.9	KW
NO. OF PORTS	3.	

POINTING & DISTURBANCE SUMMARY FOR LOW INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350
SL01	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM01						----------	----------	----------	----------						
CM02	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM03							-								
SA02	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********
SA03	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
SA04	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CC05							-								
CM05	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM06							-								
CM07	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM08							-								
OT01	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
OT02	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
TS01						----------	----------	----------	----------						
TS02							-----								

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POINTING & DISTURBANCE SUMMARY FOR HIGH INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

				1	1	1	1	2	2	2	2	3	3	3
	2	5	7	0	2	5	7	0	2	5	7	0	2	5
0	5	0	5	0	5	0	5	0	5	0	5	0	5	0

SO01 0000000000000000000000000000000000000000000000000000000000000

OT03 ----------

OT04 ----------

SP02 0000000

SA01 **

* * * SPACE STATION OPERATIONS ANALYSIS FOR YEAR 1995 * * *

TYPE #1 = 2 TYPE #2 = 2

***>> FLIGHT NO. 1
NUMBER OF FLIGHTS: 1 PRIME MISSION: **MULTIBEAM COMM SATELLITE OUTCOME # IS 0 KEY IS CC04
INCLINATION IS 0.00
CODE IS SSCM
SECOND MISSION: CRYSTAL GROWTH RESUP-1 OUTCOME # IS 0
KEY IS CM03
CODE IS PMXX

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.651
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS 1.661

SP STA SYS OPS 7.555

EVA CRANE OP 5.040

EVA SERVICE TECH 5.040

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 8.756AWAY 4.200
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 6.987

S/C SYS - ELEC 9.160

S/C SYS - MECH 7.470

S/C SYS - FLUIDS 7.879

SP STA SYS OPS 14.452

EVA CRANE OP	6.116
EVA SERVICE TECH	13.361
MANNED OTV PILOT	8.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.700
TEST & C/O	=	3.400
MODULE MATE	=	0.152
FAB STRUCT	=	0.246

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 11.650

FIRST MISSION RESULTS CREW SKILL	MANDAYS
S/C SYS - DATA	5.776
S/C SYS - ELEC	3.730
S/C SYS - MECH	3.730
S/C SYS - FLUIDS	3.570
SP STA SYS OPS	23.299
EVA CRANE OP	8.502
EVA SERVICE TECH	5.562

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	11.6
OTV OPERATIONS	8.8
OTV MISSIONS	4.2

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	11.6
OTV OPERATIONS	8.8
OTV MISSIONS	4.2

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 2
NUMBER OF FLIGHTS: 1 PRIME MISSION: **CRYSTAL GROWTH FACTORY/PLAT OUTCOME # IS 0 KEY IS CM02
INCLINATION IS 29.00
CODE IS PMCL
SECOND MISSION: TMS CAB DELIVERY OUTCOME # IS 0

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SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3792
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS	1.593
SP STA SYS OPS	9.989
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.718
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	0.848
S/C SYS - ELEC	0.590
S/C SYS - MECH	0.590
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	3.436
EVA CRANE OP	1.394
EVA SERVICE TECH	1.394

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 1 TYPE #2 = 4.

***>> FLIGHT NO. 3

NUMBER OF FLIGHTS: 1 PRIME MISSION: SYNTH APERTURE RADAR OUTCOME # IS 0 KEY IS S002
INCLINATION IS 98.00
CODE IS SPCL
SECOND MISSION: HI-INCL STATION RESUPPLY OUTCOME # IS 0
KEY IS OT04
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 7.998

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.140
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 2.012
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 0.848

S/C SYS - ELEC 0.590

S/C SYS - MECH 0.590

S/C SYS - FLUIDS 0.510

SP STA SYS OPS 4.024

EVA CRANE OP 1.982

EVA SERVICE TECH 1.394

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 3 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	2.0
OTV OPERATIONS	0.0

OTV MISSIONS 0.0

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 3 IN MANDAYS/YR

STS OPERATIONS 3.9
CONSTRUCTION OPERATIONS 2.0
OTV OPERATIONS 0.0
OTV MISSIONS 0.0

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 4
NUMBER OF FLIGHTS: 1 PRIME MISSION: **INTELSAT-7,7A CLASS COMSAT OUTCOME # IS 0 KEY IS CC03
INCLINATION IS 0.00
CODE IS FXCL
SECOND MISSION: TMS CAB DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS 1.661

SP STA SYS OPS 10.075

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 8.756AWAY 4.200
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 6.987

S/C SYS - ELEC 9.160

S/C SYS - MECH	7.470
S/C SYS - FLUIDS	7.879
SP STA SYS OPS	16.972
EVA CRANE OP	8.636
EVA SERVICE TECH	15.881
MANNED OTV PILOT	8.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.200
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.280
TEST & C/O	=	0.486

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 2.146

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	0.816
S/C SYS - ELEC	0.510
S/C SYS - MECH	0.510
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	4.292
EVA CRANE OP	2.251
EVA SERVICE TECH	1.075

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 4 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	2.1
OTV OPERATIONS	8.8
OTV MISSIONS	4.2

TYPE #1 = 2 TYPE #2 = 2

***>> FLIGHT NO. 5
NUMBER OF FLIGHTS: 2 PRIME MISSION: **RECONFIGURABLE COMM. SATELLI OUTCOME # IS 0 KEY IS CC05
INCLINATION IS 0.00
CODE IS FXCM
SECOND MISSION: CRYSTAL GROWTH RESUP-1 OUTCOME # IS 0
KEY IS CM03
CODE IS PMXX

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 5.303

STS OPERATIONS CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - FLUIDS	3.322
SP STA SYS OPS	15.109
EVA CRANE OP	10.080
EVA SERVICE TECH	10.080

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 7.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 2 FLIGHTS:
AT SPACE STA 38.512AWAY 29.400

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	34.973
S/C SYS - ELEC	39.320
S/C SYS - MECH	35.939
S/C SYS - FLUIDS	36.758
SP STA SYS OPS	28.905
EVA CRANE OP	12.232
EVA SERVICE TECH	26.722
MANNED OTV PILOT	59.319

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.993
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.140
TEST & C/O = 3.400
MODULE MATE = 0.152

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ADJUSTED DUR FOR 2 FLIGHTS, AT SPACE STATION 19.912
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	11.552
S/C SYS - ELEC	7.459
S/C SYS - MECH	7.459
S/C SYS - FLUIDS	7.140
SP STA SYS OPS	39.824
EVA CRANE OP	11.264
EVA SERVICE TECH	10.088

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 5 IN MANDAYS/YR

STS OPERATIONS	5.3
CONSTRUCTION OPERATIONS	19.9
OTV OPERATIONS	38.5
OTV MISSIONS	29.4

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 5 IN MANDAYS/YR

STS OPERATIONS	5.3
CONSTRUCTION OPERATIONS	19.9
OTV OPERATIONS	38.5
OTV MISSIONS	29.4

TYPE #1 = 3 TYPE #2 = 4

***>> FLIGHT NO. 6
NUMBER OF FLIGHTS: 1 PRIME MISSION: **LARGE POWER SY TECHNOLOGY OUTCOME # IS 10 KEY IS TE01
INCLINATION IS 29.00
CODE IS SSCL
SECOND MISSION: TMS PROP DELIV OUTCOME # IS 0

SHUTTLE OPERATIONS

*--> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3629
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

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S/C SYS - FLUIDS	1.524
SP STA SYS OPS	9.904
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.152

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.877
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	0.880
S/C SYS - ELEC	0.670
S/C SYS - MECH	0.670
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	3.755
EVA CRANE OP	1.714
EVA SERVICE TECH	1.714

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 6 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	1.9
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 7
NUMBER OF FLIGHTS: 1 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 11 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL
SECOND MISSION: TMS PROP DELIV OUTCOME # IS 0

SHUTTLE OPERATIONS

*--> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)

```
ORBITER RELOAD    =  0.6000  (MISSION 2)
ORBITER DEPART    =  0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF   1 FLIGHTS:    3.999
STS OPERATIONS   MISSION RESULTS
CREW SKILL        MANDAYS

SP STA SYS OPS       8.261

EVA CRANE OP         7.560

EVA SERVICE TECH     7.560

                          CONSTRUCTION OPERATIONS


                ***DURATION SUMMARY FORFIRST          MISSION FLIGHT NO.    7 IN MANDAYS/YR***

    STS OPERATIONS                4.0
    CONSTRUCTION OPERATIONS       0.0
    OTV OPERATIONS                0.0
    OTV MISSIONS                  0.0

TYPE #1 =    2 TYPE #2 =    4

***>> FLIGHT NO.   8
  NUMBER OF FLIGHTS:   1 PRIME MISSION: CONTINUOUS FLOW   ELECTRO RESUPP  OUTCOME # IS   11 KEY IS CM06
 INCLINATION IS    29.00
CODE IS PMXL
SECOND MISSION: TMS DELIVERY                        OUTCOME # IS    0

                          SHUTTLE OPERATIONS

 *--> THIS FLIGHT MANIFESTED WITH MINITANKER

 UNADJUSTED DURATIONS
ORBITER ARRIVE    =  0.0832
ORBITER OFFLOAD   =  0.6000
ORBITER OFFLOAD   =  0.6000  (MISSION 2)
ORBITER RELOAD    =  0.6000  (MISSION 2)
ORBITER DEPART    =  0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF   1 FLIGHTS:    3.999
STS OPERATIONS   MISSION RESULTS
CREW SKILL        MANDAYS

SP STA SYS OPS       8.261

EVA CRANE OP         7.560

EVA SERVICE TECH     7.560

                          CONSTRUCTION OPERATIONS


                ***DURATION SUMMARY FORFIRST          MISSION FLIGHT NO.    8 IN MANDAYS/YR***

    STS OPERATIONS                4.0
```

CONSTRUCTION OPERATIONS 0.0
OTV OPERATIONS 0.0
OTV MISSIONS 0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 9
NUMBER OF FLIGHTS: 1 PRIME MISSION: LOW INCL STA MODULE DEL OUTCOME # IS 10 KEY IS OT01
INCLINATION IS 29.00
CODE IS SSSS

SHUTTLE OPERATIONS

*--> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 1.479
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 3.221

EVA CRANE OP 2.520

EVA SERVICE TECH 2.520

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 9 IN MANDAYS/YR

STS OPERATIONS 1.5
CONSTRUCTION OPERATIONS 0.0
OTV OPERATIONS 0.0
OTV MISSIONS 0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 10
NUMBER OF FLIGHTS: 7 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 7 FLIGHTS: 10.352
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 22.544

EVA CRANE OP 17.640

EVA SERVICE TECH 17.640

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 10 IN MANDAYS/YR

STS OPERATIONS	10.4
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 11
NUMBER OF FLIGHTS: 3 PRIME MISSION: GLASSPROC OPTICA LFIBERS RESUPP OUTCOME # IS 0 KEY IS CM08
INCLINATION IS 29.00
CODE IS SPCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 3 FLIGHTS: 4.436
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 9.662

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.070
TEST & C/O = 0.486
MODULE MATE = 0.152

ADJUSTED DUR FOR 3 FLIGHTS, AT SPACE STATION 6.073
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 2.641

S/C SYS - ELEC 2.010

S/C SYS - MECH 2.010

S/C SYS - FLUIDS 1.531

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SP STA SYS OPS      12.146

EVA CRANE OP         6.023

EVA SERVICE TECH     5.141


                ***DURATION SUMMARY FORFIRST          MISSION FLIGHT NO.   11 IN MANDAYS/YR***

    STS OPERATIONS                4.4
    CONSTRUCTION OPERATIONS       6.1
    OTV OPERATIONS                0.0
    OTV MISSIONS                  0.0

TYPE #1 =    4 TYPE #2 =    0

***>> FLIGHT NO.  12
  NUMBER OF FLIGHTS:   4 PRIME MISSION: LOW INCL STA      RESUPPLY        OUTCOME # IS    0 KEY IS OT02
 INCLINATION IS    29.00
CODE IS SORS

                          SHUTTLE OPERATIONS

 UNADJUSTED DURATIONS
ORBITER ARRIVE   =  0.0832
ORBITER OFFLOAD  =  0.6000
ORBITER RELOAD   =  0.6000
ORBITER DEPART   =  0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF   4 FLIGHTS:  10.955
STS OPERATIONS   MISSION RESULTS
CREW SKILL        MANDAYS

SP STA SYS OPS      22.962

EVA CRANE OP        20.160

EVA SERVICE TECH    20.160

                               CONSTRUCTION OPERATIONS


                ***DURATION SUMMARY FORFIRST          MISSION FLIGHT NO.   12 IN MANDAYS/YR***

    STS OPERATIONS               11.0
    CONSTRUCTION OPERATIONS       0.0
    OTV OPERATIONS                0.0
    OTV MISSIONS                  0.0

TYPE #1 =    4 TYPE #2 =    0

***>> FLIGHT NO.  13
  NUMBER OF FLIGHTS:   1 PRIME MISSION: HI-INCL STATION   RESUPPLY        OUTCOME # IS    0 KEY IS OT04
 INCLINATION IS    98.00
CODE IS SORS

                               SHUTTLE OPERATIONS
```

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.739
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	5.741
EVA CRANE OP	5.040
EVA SERVICE TECH	5.040

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 13 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

PAYLOADS SERVICING ANALYSIS

PAYLOAD WITH KEY S001 EARTH OBSERV PALLET

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 150.000

UPDATED WORK DURATION AT SP STA 150.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	15.000
EARTH, OCEAN OBS	150.000
S/C SYS - ELEC	7.500
S/C SYS - FLUIDS	7.500
SP STA SYS OPS	7.500

DURATION SUMMARY FOR PAYLOAD NO. 1 S001 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	150.0

PAYLOAD WITH KEY S002 SYNTH APERTURE RADAR

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 5.000

UPDATED WORK DURATION AT SP STA 5.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	0.500
EARTH, OCEAN OBS	5.000
S/C SYS - ELEC	0.250
S/C SYS - FLUIDS	0.250

SP STA SYS OPS 0.250

DURATION SUMMARY FOR PAYLOAD NO. 2 S002 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 5.0

PAYLOAD WITH KEY OT03 SPACE STATION MODULES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 5 OT03 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 67.200

SP STA SYS OPS 470.400

EVA CRANE OP 67.200

EVA SERVICE TECH 67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 5 OT03 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT04 HI-INCL STATION RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 6 OT04 IN MANDAYS/YR

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SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SP02 SPACE PHYSICS PALLET

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
PHYSICS SCIENCE = 54.000

UPDATED WORK DURATION AT SP STA 54.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 5.400

PHYS SCI RESEARC 54.000

S/C SYS - ELEC 2.700

S/C SYS - FLUIDS 2.700

SP STA SYS OPS 2.700

DURATION SUMMARY FOR PAYLOAD NO. 8 SP02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 54.0

PAYLOAD WITH KEY SA01 VLBI/COSMIC RAY PKG

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 67.000

UPDATED WORK DURATION AT SP STA 67.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 6.700

ASTROPHSICS 67.000

S/C SYS - ELEC 3.350

S/C SYS - FLUIDS	3.350
SP STA SYS OPS	3.350

DURATION SUMMARY FOR PAYLOAD NO. 9 SA01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	67.0

PAYLOAD WITH KEY SL01 HUMAN LIFE SI CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

LIFE SCIENCE = 73.000

UPDATED WORK DURATION AT SP STA 73.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	7.300
MED/BIO RESEARCH	73.000
S/C SYS - ELEC	3.650
S/C SYS - FLUIDS	3.650
SP STA SYS OPS	3.650

DURATION SUMMARY FOR PAYLOAD NO. 11 SL01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	73.0

PAYLOAD WITH KEY SL03 PLANT DEVEL CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

LIFE SCIENCE = 14.000

UPDATED WORK DURATION AT SP STA 14.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	1.400
MED/BIO RESEARCH	14.000
S/C SYS - ELEC	0.700
S/C SYS - FLUIDS	0.700
SP STA SYS OPS	0.700

DURATION SUMMARY FOR PAYLOAD NO. 13 SL03 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 14.0

PAYLOAD WITH KEY SL04 LIFESCIENCES RES FAC

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 191.000

UPDATED WORK DURATION AT SP STA 191.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	19.100
MED/BIO RESEARCH	191.000
S/C SYS - ELEC	9.550
S/C SYS - FLUIDS	9.550
SP STA SYS OPS	9.550

DURATION SUMMARY FOR PAYLOAD NO. 14 SL04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 191.0

PAYLOAD WITH KEY SL05 CENTRIFUGE (ADD TO LSRF)

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 91.000

UPDATED WORK DURATION AT SP STA 91.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	9.100
MED/BIO RESEARCH	91.000
S/C SYS - ELEC	4.550
S/C SYS - FLUIDS	4.550
SP STA SYS OPS	4.550

DURATION SUMMARY FOR PAYLOAD NO. 15 SL05 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	91.0

PAYLOAD WITH KEY CM01 MATLS SCIENCE LAB

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 300.000

UPDATED WORK DURATION AT SP STA 300.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 17 CM01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	300.0

PAYLOAD WITH KEY CM02 CRYSTAL GROWTH FACTORY/PLAT

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 36.000
TEST & C/O = 1.944
TMS LAUNCH = 0.328

TMS OPS = 12.000
TMS CREW OPS = 12.000
TMS CAPTURE/BRTH = 0.168
TMS MAINT/REFUEL = 4.400
CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 18 CM02 154.7 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	61.471
S/C SYS - DATA	126.739
S/C SYS - ELEC	54.818
S/C SYS - MECH	125.800
S/C SYS - FLUIDS	44.206
SP STA SYS OPS	143.136
EVA SERVICE TECH	56.952
TMS PILOT	254.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 18 CM02 IN MANDAYS/YR

SERVICING OPERATIONS 154.7
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM03 CRYSTAL GROWTH RESUP-1

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 12.000
TEST & C/O = 1.458
TMS LAUNCH = 0.246
TMS OPS = 9.000
TMS CREW OPS = 9.000
TMS CAPTURE/BRTH = 0.126
TMS MAINT/REFUEL = 3.300
CREW MOD MAINT = 5.130

ADJUSTED SERVICING TIME FOR 19 CM03 84.5 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	30.353
S/C SYS - DATA	79.304
S/C SYS - ELEC	25.364

S/C SYS - MECH	78.600
S/C SYS - FLUIDS	17.404
SP STA SYS OPS	75.852
EVA SERVICE TECH	42.714
TMS PILOT	127.562

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 19 CM03 IN MANDAYS/YR

SERVICING OPERATIONS	84.5
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY SA02 ASTRO TELESCOPE CLUSTER

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

ASTROPHYSICS = 65.000

UPDATED WORK DURATION AT SP STA 65.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	6.500
ASTROPHSICS	65.000
S/C SYS - ELEC	3.250
S/C SYS - FLUIDS	3.250
SP STA SYS OPS	3.250

DURATION SUMMARY FOR PAYLOAD NO. 21 SA02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	65.0

PAYLOAD WITH KEY SA03 ASTROPHYSICS FREE-FLYER

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	2.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 22 SA03 30.1 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	11.078
S/C SYS - DATA	36.574
S/C SYS - ELEC	6.355
S/C SYS - MECH	25.324
S/C SYS - FLUIDS	4.313
SP STA SYS OPS	33.323
EVA SERVICE TECH	14.238
TMS PILOT	34.121

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 22 SA03 IN MANDAYS/YR

SERVICING OPERATIONS	30.1
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY SA04 ASTROPHYSICS OBSERVATORIES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	6.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 23 SA04 38.5 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.278

S/C SYS - DATA	40.774
S/C SYS - ELEC	10.555
S/C SYS - MECH	29.524
S/C SYS - FLUIDS	8.513
SP STA SYS OPS	41.723
EVA SERVICE TECH	14.238
TMS PILOT	50.921

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 23 SA04 IN MANDAYS/YR

SERVICING OPERATIONS 38.5
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC03 INTELSAT-7,7A CLASS COMSAT

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 26 CC03 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC04 MULTIBEAM COMM. SATELLITE

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 27 CC04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC05 RECONFIGURABLE COMM. SATELLITE

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 28 CC05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM05 CONT FLOW ELEC- TROPH PLATFORM

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

ADJUSTED SERVICING TIME FOR 29 CM05 0.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 29 CM05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM06 CONTINUOUS FLOW ELECTRO RESUPP

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 48.000
TEST & C/O = 1.944
TMS LAUNCH = 0.328
TMS OPS = 12.000
TMS CREW OPS = 12.000
TMS CAPTURE/BRTH = 0.168
TMS MAINT/REFUEL = 4.400
CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 30 CM06 179.9 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	74.071
S/C SYS - DATA	139.339
S/C SYS - ELEC	67.418
S/C SYS - MECH	138.400
S/C SYS - FLUIDS	56.806
SP STA SYS OPS	168.336
EVA SERVICE TECH	56.952
TMS PILOT	304.483

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 30 CM06 IN MANDAYS/YR

SERVICING OPERATIONS 179.9
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM07 GLASS PROC PLANT

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 50.000

UPDATED WORK DURATION AT SP STA 50.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 31 CM07 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 50.0

PAYLOAD WITH KEY CM08 GLASSPROC OPTICA LFIBERS RESUPP

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 8.000

UPDATED WORK DURATION AT SP STA 8.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 32 CM08 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 8.0

PAYLOAD WITH KEY OT01 LOW INCL STA MODULE DEL

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 33 OT01 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 67.200

SP STA SYS OPS 470.400

EVA CRANE OP 67.200

EVA SERVICE TECH 67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 33 OT01 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT02 LOW INCL STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 34 OT02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT05 HI-ALT STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 35 OT05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY TE01 LARGE POWER SYS TECHNOLOGY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 80.000

UPDATED WORK DURATION AT SP STA 80.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	16.000
ENGINEERING	80.000
S/C SYS - DATA	12.000
S/C SYS - ELEC	4.000
S/C SYS - MECH	4.000
S/C SYS - FLUIDS	16.000
SP STA SYS OPS	8.000
EVA CRANE OP	4.000

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EVA SERVICE TECH	4.000
MANNED OTV PILOT	12.000

DURATION SUMMARY FOR PAYLOAD NO. 40 TE01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	80.0

PAYLOAD WITH KEY TS02 TECH DEVEL CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 20.000

UPDATED WORK DURATION AT SP STA 20.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	4.000
ENGINEERING	20.000
S/C SYS - DATA	3.000
S/C SYS - ELEC	1.000
S/C SYS - MECH	1.000
S/C SYS - FLUIDS	4.000
SP STA SYS OPS	2.000
EVA CRANE OP	1.000
EVA SERVICE TECH	1.000
MANNED OTV PILOT	3.000

DURATION SUMMARY FOR PAYLOAD NO. 45 TS02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	20.0

SKILL MIX SUMMARIES LOW INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***	***COMMERC MISSIONS***	***TECH DEV MISSIONS**	****OPER SUPPORT*****

	OPS SERV	MSN OP	CONST	OPS SERV	MSN OP	CONST	OPS SERV	MSN OP	CONST	OPS SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0 26.4	43.4	0.0	0.0 165.9	0.0	0.0	0.0 0.0	20.0	0.0	0.0 67.2	0.0	0.0
MED/BIO RESEARCH	0.0 0.0	369.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0
PHYS SCI RESEARC	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0
EARTH, OCEAN OBS	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0
ENGINEERING	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0
ASTROPHSICS	0.0 0.0	65.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	100.0	0.0	0.0 0.0	0.0	0.0
S/C SYS - DATA	0.0 77.3	0.0	0.0	48.9 345.4	0.0	21.6	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0
S/C SYS - ELEC	0.0 16.9	21.7	0.0	57.6 147.6	0.0	14.3	0.0 0.0	15.0	0.0	0.0 0.0	0.0	0.0
S/C SYS - MECH	0.0 54.8	0.0	0.0	50.9 342.8	0.0	14.3	0.0 0.0	5.0	0.0	0.0 0.0	0.0	0.0
S/C SYS - FLUIDS	0.0 12.8	21.7	0.0	45.9 118.4	0.0	13.3	0.0 0.0	20.0	0.0	14.9 0.0	0.0	0.0
SP STA SYS OPS	0.0 75.0	21.7	0.0	95.6 387.3	0.0	83.0	0.0 0.0	10.0	0.0	82.3 470.4	0.0	0.0
EVA CRANE OP	0.0 0.0	0.0	0.0	72.3 0.0	0.0	29.4	0.0 0.0	5.0	0.0	47.9 67.2	0.0	0.0
EVA SERVICE TECH	0.0 28.5	0.0	0.0	101.3 156.6	0.0	23.3	0.0 0.0	5.0	0.0	47.9 67.2	0.0	0.0
MANNED OTV PILOT	0.0 0.0	0.0	0.0	76.6 0.0	0.0	0.0	0.0 0.0	15.0	0.0	0.0 0.0	0.0	0.0
TMS PILOT	0.0 85.0	0.0	0.0	0.0 686.1	0.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0
MATLS SCIENCE	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
919.	3099.	200.	865.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	322.9
MED/BIO RESEARCH	369.0
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	0.0
ENGINEERING	100.0
ASTROPHSICS	65.0
S/C SYS - DATA	508.3
S/C SYS - ELEC	263.1
S/C SYS - MECH	467.8
S/C SYS - FLUIDS	247.0
SP STA SYS OPS	1225.4
EVA CRANE OP	221.9
EVA SERVICE TECH	429.8
MANNED OTV PILOT	91.6
TMS PILOT	771.2
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 13.9 PEOPLE

SKILL MIX SUMMARIES HIGH INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***			***COMMERC MISSIONS***			***TECH DEV MISSIONS**			****OPER SUPPORT*****		
	OPS SERV	MSN OP	CONST	OPS SERV	MSN OP	CONST	OPS SERV	MSN OP	CONST	OPS SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0 0.0	27.6	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0 67.2	0.0	0.0
MED/BIO RESEARCH	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0
PHYS SCI RESEARC	0.0 0.0	54.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0
EARTH, OCEAN OBS	0.0 0.0	155.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0
ENGINEERING	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0
ASTROPHSICS	0.0 0.0	67.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.0
S/C SYS - DATA	0.0 0.0	0.0	0.8	0.0 0.0	0.0	0.0	0.0 0.0	0.0	0.9	0.0 0.0	0.0	0.0

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OF POOR QUALITY

S/C SYS - ELEC	0.0	0.0	13.8	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	0.0	13.8	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.5	0.0	0.0	0.0
SP STA SYS OPS	2.5	0.0	13.8	4.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	3.8	18.6	470.4	0.0	0.0
EVA CRANE OP	2.5	0.0	0.0	2.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	1.7	15.1	67.2	0.0	0.0
EVA SERVICE TECH	2.5	0.0	0.0	1.4	0.0	0.0	0.0	0.0	2.5	0.0	0.0	1.7	15.1	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
362.	0.	17.	722.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	94.8
MED/BIO RESEARCH	0.0
PHYS SCI RESEARC	54.0
EARTH, OCEAN OBS	155.0
ENGINEERING	0.0
ASTROPHSICS	67.0
S/C SYS - DATA	1.7
S/C SYS - ELEC	15.1
S/C SYS - MECH	1.3
S/C SYS - FLUIDS	16.3
SP STA SYS OPS	515.6
EVA CRANE OP	91.1
EVA SERVICE TECH	90.5
MANNED OTV PILOT	0.0
TMS PILOT	0.0
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 3.0 PEOPLE

LOW INCLINATION

DURATION SUMMARY FOR YEAR 1995 IN MANDAYS/YR

STS OPERATIONS	51.0
CONSTRUCTION	41.5
OTV OPERATIONS	56.0
OTV MISSIONS	37.8
SERVICING OPERATIONS	823.8
SCIENCE & TECH DEMO	892.0

HIGH INCLINATION

DURATION SUMMARY FOR YEAR 1995 IN MANDAYS/YR

STS OPERATIONS	10.6
CONSTRUCTION	3.9

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OTV OPERATIONS	0.0
OTV MISSIONS	0.0
SERVICING OPERATIONS	336.0
SCIENCE & TECH DEMO	276.0

SUMMARY OF SPACE STATION PAYLOADS THIS YEAR

KEY	TITLE	PLCODE	INCL	PK POWER	DUTY CYCLE
S001	EARTH OBSERV PALLET	SPCL	98.0	3.5	82.2
S002	SYNTH APERTURE RADAR	SPCL	98.0	10.0	2.7
OT03	SPACE STATION MODULES	SSSS	98.0	15.0	100.0
OT04	HI-INCL STATION RESUPPLY	SORS	98.0	1.0	100.0
SP02	SPACE PHYSICS PALLET	SPCM	98.0	10.0	9.9
SA01	VLBI/COSMIC RAY PKG	SPCL	98.0	2.0	100.0
SL01	HUMAN LIFE SI CARRY-ONS	SSSA	29.0	1.7	100.0
SL03	PLANT DEVEL CARRY-ONS	SSSA	29.0	0.5	100.0
SL04	LIFESCIENCES RES FAC	SPXX	29.0	12.2	100.0
SL05	CENTRIFUGE (ADD TO LSRF)	SSCL	29.0	4.0	100.0
CM01	MATLS SCIENCE LAB	SPXX	29.0	25.0	35.6
CM02	CRYSTAL GROWTH FACTORY/PLAT	PMCL	29.0	0.0	100.0
CM03	CRYSTAL GROWTH RESUP-1	PMXX	29.0	0.0	0.5
SA02	ASTRO TELESCOPE CLUSTER	SPXX	29.0	4.0	100.0
SA03	ASTROPHYSICS FREE-FLYER	FMXM	29.0	0.0	100.0
SA04	ASTROPHYSICS OBSERVATORIES	FMXM	29.0	1.0	100.0
CC03	INTELSAT-7,7A CLASS COMSAT	FXCL	0.0	0.0	0.0

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CC04	MULTIBEAM COMM. SATELLITE	SSCM	0.0	0.0	0.0
CC05	RECONFIGURABLE COMM. SATELLITE	FXCM	0.0	0.0	1.9
CM05	CONT FLOW ELEC-TROPH PLATFORM	PMCL	29.0	0.0	100.0
CM06	CONTINUOUS FLOW ELECTRO RESUPP	PMXL	29.0	2.0	0.0
CM07	GLASS PROC PLANT	SPCL	29.0	10.6	100.0
CM08	GLASSPROC OPTICA LFIBERS RESUPP	SPCL	29.0	0.0	0.0
OT01	LOW INCL STA MODULE DEL	SSSS	29.0	20.0	100.0
OT02	LOW INCL STA RESUPPLY	SORS	29.0	0.0	100.0
OT05	HI-ALT STA RESUPPLY	OMSB	29.0	0.0	100.0
TE01	LARGE POWER SYS TECHNOLOGY	SSCL	29.0	0.0	21.9
TS02	TECH DEVEL CARRY-ONS	SSSA	29.0	0.5	6.8

LOW INCLINATION

PEAK POWER	AVERAGE POWER
81.5	62.9

HIGH INCLINATION

PEAK POWER	AVERAGE POWER
41.5	22.1

RESOURCES SUMMARY FOR LOW INCLINATION SPACE STATION

INTERNAL VOLUME	8.4 CUBIC METERS
POWER	62.9 KW
NO. OF PORTS	5.

RESOURCES SUMMARY FOR HIGH INCLINATION SPACE STATION

INTERNAL VOLUME	6.5 CUBIC METERS
POWER	22.1 KW
NO. OF PORTS	4.

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POINTING & DISTURBANCE SUMMARY FOR LOW INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350
SL01	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM01						----------	----------	----------							
CM02	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM03							-								
SA02	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********
SA03	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
SA04	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CC03							-								
CC04							-								
CC05							-								
CM05	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM06							-								
CM07	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM08							-								
OT01	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
OT02	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
OT05	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
TE01						----------	----------	----------	----------						
TS02							-----								

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POINTING & DISTURBANCE SUMMARY FOR HIGH INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

				1	1	1	1	2	2	2	2	3	3	3
	2	5	7	0	2	5	7	0	2	5	7	0	2	5
0	5	0	5	0	5	0	5	0	5	0	5	0	5	0

S001 0000000000000000000000000000000000000000000000000000000000000000

S002 00

OT03 ----------

OT04 ----------

SP02 0000000

SA01 **********

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* * * SPACE STATION OPERATIONS ANALYSIS FOR YEAR 1996 * * *

TYPE #1 = 2 TYPE #2 = 2

***>> FLIGHT NO. 1
NUMBER OF FLIGHTS: 1 PRIME MISSION: **MULTIBEAM COMM SATELLITE OUTCOME # IS 0 KEY IS CC04
INCLINATION IS 0.00
CODE IS SSCM
SECOND MISSION: CRYSTAL GROWTH RESUP-1 OUTCOME # IS 0
KEY IS CM03
CODE IS PMXX

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.651
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS 1.661

SP STA SYS OPS 7.555

EVA CRANE OP 5.040

EVA SERVICE TECH 5.040

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 8.756AWAY 4.200
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 6.987

S/C SYS - ELEC 9.160

S/C SYS - MECH 7.470

S/C SYS - FLUIDS 7.879

SP STA SYS OPS 14.452

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EVA CRANE OP	6.116
EVA SERVICE TECH	13.361
MANNED OTV PILOT	8.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.700
TEST & C/O	=	3.400
MODULE MATE	=	0.152
FAB STRUCT	=	0.246

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 11.650

FIRST CREW SKILL MISSION RESULTS	MANDAYS
S/C SYS - DATA	5.776
S/C SYS - ELEC	3.730
S/C SYS - MECH	3.730
S/C SYS - FLUIDS	3.570
SP STA SYS OPS	23.299
EVA CRANE OP	8.502
EVA SERVICE TECH	5.562

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	11.6
OTV OPERATIONS	8.8
OTV MISSIONS	4.2

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	11.6
OTV OPERATIONS	8.8
OTV MISSIONS	4.2

TYPE #1 = 4 TYPE #2 = 1

***>> FLIGHT NO. 2
NUMBER OF FLIGHTS: 1 PRIME MISSION: HI-INCL STATION RESUPPLY OUTCOME # IS 0 KEY IS OT04
INCLINATION IS 98.00
CODE IS SORS
SECOND MISSION: SPACE SCIENCE SUBSATELLITE OUTCOME # IS 0

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KEY IS SP01
CODE IS FSXX

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.999
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 8.261

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS	4.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS	4.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 3
NUMBER OF FLIGHTS: 1 PRIME MISSION: **INTELSAT-7,7A CLASS COMSAT OUTCOME # IS 0 KEY IS CC03
INCLINATION IS 0.00
CODE IS FXCL
SECOND MISSION: TMS CAB DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911

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STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS	1.661
SP STA SYS OPS	10.075
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

OTV OPERATIONS

UNADJUSTED DURATIONS

MAINTAIN STAGE	=	1.150
MATE TO PAYLD	=	0.131
STAGE/STAGE MATE	=	0.210
OTV/PLD C/O	=	0.555
LAUNCH	=	0.082
CAPTURE	=	0.042
MISSION OPS	=	2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 8.756AWAY 4.200

FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	6.987
S/C SYS - ELEC	9.160
S/C SYS - MECH	7.470
S/C SYS - FLUIDS	7.879
SP STA SYS OPS	16.972
EVA CRANE OP	8.636
EVA SERVICE TECH	15.881
MANNED OTV PILOT	8.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.200
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.280
TEST & C/O	=	0.486

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 2.146

FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	0.816
S/C SYS - ELEC	0.510

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S/C SYS - MECH 0.510

S/C SYS - FLUIDS 0.510

SP STA SYS OPS 4.292

EVA CRANE OP 2.251

EVA SERVICE TECH 1.075

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 3 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	2.1
OTV OPERATIONS	8.8
OTV MISSIONS	4.2

TYPE #1 = 2 TYPE #2 = 2

***>> FLIGHT NO. 4
NUMBER OF FLIGHTS: 1 PRIME MISSION: **CONT FLOW ELEC TROPH PLATFOR OUTCOME # IS 0 KEY IS CM05
INCLINATION IS 29.00
CODE IS PMCL
SECOND MISSION: CRYSTAL GROWTH RESUP-1 OUTCOME # IS 0
KEY IS CM03
CODE IS PMXX

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.651
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS 1.661

SP STA SYS OPS 7.555

EVA CRANE OP 5.040

EVA SERVICE TECH 5.040

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.718
FIRST MISSION RESULTS

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CREW SKILL	MANDAYS
S/C SYS - DATA	0.848
S/C SYS - ELEC	0.590
S/C SYS - MECH	0.590
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	3.436
EVA CRANE OP	1.394
EVA SERVICE TECH	1.394

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 4 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 4 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 2

***>> FLIGHT NO. 5
NUMBER OF FLIGHTS: 1 PRIME MISSION: **RECONFIGURABLE COMM. SATELLI OUTCOME # IS 0 KEY IS CC05
INCLINATION IS 0.00
CODE IS FXCM
SECOND MISSION: CRYSTAL GROWTH RESUP-1 OUTCOME # IS 0
KEY IS CM03
CODE IS PMXX

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.651
STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - FLUIDS	1.661
SP STA SYS OPS	7.555

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EVA CRANE OP	5.040
EVA SERVICE TECH	5.040

OTV OPERATIONS

UNADJUSTED DURATIONS

MAINTAIN STAGE	=	1.150
MATE TO PAYLD	=	0.131
STAGE/STAGE MATE	=	0.210
OTV/PLD C/O	=	0.555
LAUNCH	=	0.082
CAPTURE	=	0.042
MISSION OPS	=	7.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 19.256AWAY 14.700

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	17.487
S/C SYS - ELEC	19.660
S/C SYS - MECH	17.970
S/C SYS - FLUIDS	18.379
SP STA SYS OPS	14.452
EVA CRANE OP	6.116
EVA SERVICE TECH	13.361
MANNED OTV PILOT	29.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.140
TEST & C/O	=	3.400
MODULE MATE	=	0.152

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 9.956

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	5.776
S/C SYS - ELEC	3.730
S/C SYS - MECH	3.730
S/C SYS - FLUIDS	3.570
SP STA SYS OPS	19.912

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EVA CRANE OP 5.632

EVA SERVICE TECH 5.044

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 5 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	10.0
OTV OPERATIONS	19.3
OTV MISSIONS	14.7

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 5 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	10.0
OTV OPERATIONS	19.3
OTV MISSIONS	14.7

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 6
NUMBER OF FLIGHTS: 2 PRIME MISSION: **RECONFIGURABLE COMM. SATELLI OUTCOME # IS 0 KEY IS CC05
INCLINATION IS 0.00
CODE IS FXCM
SECOND MISSION: TMS PROP DELIV OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 7.823
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS 3.322

SP STA SYS OPS 20.149

EVA CRANE OP 15.120

EVA SERVICE TECH 15.120

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082

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CAPTURE = 0.042
MISSION OPS = 7.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 2 FLIGHTS:
AT SPACE STA 38.512AWAY 29.400

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	34.973
S/C SYS - ELEC	39.320
S/C SYS - MECH	35.939
S/C SYS - FLUIDS	36.758
SP STA SYS OPS	33.945
EVA CRANE OP	17.272
EVA SERVICE TECH	31.762
MANNED OTV PILOT	59.319

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.993
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.140
TEST & C/O = 3.400
MODULE MATE = 0.152

ADJUSTED DUR FOR 2 FLIGHTS, AT SPACE STATION 19.912

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	11.552
S/C SYS - ELEC	7.459
S/C SYS - MECH	7.459
S/C SYS - FLUIDS	7.140
SP STA SYS OPS	39.824
EVA CRANE OP	11.264
EVA SERVICE TECH	10.088

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 6 IN MANDAYS/YR

STS OPERATIONS	7.8
CONSTRUCTION OPERATIONS	19.9
OTV OPERATIONS	38.5
OTV MISSIONS	29.4

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 7
NUMBER OF FLIGHTS: 1 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL
SECOND MISSION: TMS DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.999
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 8.261

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 7 IN MANDAYS/YR

STS OPERATIONS	4.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 8
NUMBER OF FLIGHTS: 2 PRIME MISSION: LOW INCL STA MODULE DEL OUTCOME # IS 10 KEY IS OT01
INCLINATION IS 29.00
CODE IS SSSS

SHUTTLE OPERATIONS

*--> THIS FLIGHT MANIFESTED WITH MINITANKER

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 2.958
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 6.441

EVA CRANE OP 5.040

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EVA SERVICE TECH 5.040

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 8 IN MANDAYS/YR

STS OPERATIONS	3.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 9
NUMBER OF FLIGHTS: 10 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 10 FLIGHTS: 14.788
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	32.206
EVA CRANE OP	25.200
EVA SERVICE TECH	25.200

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 9 IN MANDAYS/YR

STS OPERATIONS	14.8
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 10
NUMBER OF FLIGHTS: 3 PRIME MISSION: GLASSPROC OPTICA LFIBERS RESUPP OUTCOME # IS 0 KEY IS CM08
INCLINATION IS 29.00
CODE IS SPCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832

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ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 3 FLIGHTS: 4.436
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 9.662

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.070
TEST & C/O = 0.486
MODULE MATE = 0.152

ADJUSTED DUR FOR 3 FLIGHTS, AT SPACE STATION 6.073
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 2.641

S/C SYS - ELEC 2.010

S/C SYS - MECH 2.010

S/C SYS - FLUIDS 1.531

SP STA SYS OPS 12.146

EVA CRANE OP 6.023

EVA SERVICE TECH 5.141

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 10 IN MANDAYS/YR

STS OPERATIONS	4.4
CONSTRUCTION OPERATIONS	6.1
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 11
NUMBER OF FLIGHTS: 1 PRIME MISSION: GLASS PROC PLANT OUTCOME # IS 0 KEY IS CM07
INCLINATION IS 29.00
CODE IS SPCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832

ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 1.479
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 3.221

EVA CRANE OP 2.520

EVA SERVICE TECH 2.520

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.558
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 0.816

S/C SYS - ELEC 0.510

S/C SYS - MECH 0.510

S/C SYS - FLUIDS 0.510

SP STA SYS OPS 3.116

EVA CRANE OP 1.075

EVA SERVICE TECH 1.075

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 11 IN MANDAYS/YR

STS OPERATIONS	1.5
CONSTRUCTION OPERATIONS	1.6
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 12
NUMBER OF FLIGHTS: 8 PRIME MISSION: LOW INCL STA RESUPPLY OUTCOME # IS 0 KEY IS OT02
INCLINATION IS 29.00
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000

ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 8 FLIGHTS: 21.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 45.924

EVA CRANE OP 40.320

EVA SERVICE TECH 40.320

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 12 IN MANDAYS/YR

STS OPERATIONS	21.9
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 13
NUMBER OF FLIGHTS: 1 PRIME MISSION: HI-INCL STATION RESUPPLY OUTCOME # IS 0 KEY IS OT04
INCLINATION IS 98.00
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.739
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 5.741

EVA CRANE OP 5.040

EVA SERVICE TECH 5.040

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 13 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

PAYLOADS SERVICING ANALYSIS

PAYLOAD WITH KEY S001 EARTH OBSERV PALLET

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 150.000

UPDATED WORK DURATION AT SP STA 150.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.000
EARTH, OCEAN OBS	150.000
S/C SYS - ELEC	7.500
S/C SYS - FLUIDS	7.500
SP STA SYS OPS	7.500

DURATION SUMMARY FOR PAYLOAD NO. 1 S001 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	150.0

PAYLOAD WITH KEY S002 SYNTH APERTURE RADAR

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 5.000

UPDATED WORK DURATION AT SP STA 5.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	0.500
EARTH, OCEAN OBS	5.000
S/C SYS - ELEC	0.250
S/C SYS - FLUIDS	0.250

SP STA SYS OPS 0.250

DURATION SUMMARY FOR PAYLOAD NO. 2 S002 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 5.0

PAYLOAD WITH KEY OT03 SPACE STATION MODULES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 5 OT03 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 67.200

SP STA SYS OPS 470.400

EVA CRANE OP 67.200

EVA SERVICE TECH 67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 5 OT03 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT04 HI-INCL STATION RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 6 OT04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SP01 SPACE SCIENCE SUBSATELLITE

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
TMS MATE/DEMATE = 0.260

ADJUSTED SERVICING TIME FOR 7 SP01 2.1 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	0.510
S/C SYS - DATA	2.041
S/C SYS - MECH	0.204
S/C SYS - FLUIDS	0.102
SP STA SYS OPS	4.208
EVA CRANE OP	1.807
EVA SERVICE TECH	1.807

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 7 SP01 IN MANDAYS/YR

SERVICING OPERATIONS 2.1
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SP02 SPACE PHYSICS PALLET

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
PHYSICS SCIENCE = 54.000

UPDATED WORK DURATION AT SP STA 54.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	5.400

PHYS SCI RESEARC	54.000
S/C SYS - ELEC	2.700
S/C SYS - FLUIDS	2.700
SP STA SYS OPS	2.700

DURATION SUMMARY FOR PAYLOAD NO. 8 SP02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	54.0

PAYLOAD WITH KEY SA01 VLBI/COSMIC RAY PKG

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

ASTROPHYSICS = 67.000

UPDATED WORK DURATION AT SP STA 67.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	6.700
ASTROPHSICS	67.000
S/C SYS - ELEC	3.350
S/C SYS - FLUIDS	3.350
SP STA SYS OPS	3.350

DURATION SUMMARY FOR PAYLOAD NO. 9 SA01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	67.0

PAYLOAD WITH KEY SL01 HUMAN LIFE SI CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

LIFE SCIENCE = 73.000

UPDATED WORK DURATION AT SP STA 73.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	7.300
MED/BIO RESEARCH	73.000
S/C SYS - ELEC	3.650
S/C SYS - FLUIDS	3.650
SP STA SYS OPS	3.650

DURATION SUMMARY FOR PAYLOAD NO. 11 SL01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	73.0

PAYLOAD WITH KEY SL03 PLANT DEVEL CARRY-ONS

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 14.000

UPDATED WORK DURATION AT SP STA 14.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	1.400
MED/BIO RESEARCH	14.000
S/C SYS - ELEC	0.700
S/C SYS - FLUIDS	0.700
SP STA SYS OPS	0.700

DURATION SUMMARY FOR PAYLOAD NO. 13 SL03 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	14.0

PAYLOAD WITH KEY SL04 LIFE SCIENCES RES FAC

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SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 191.000

UPDATED WORK DURATION AT SP STA 191.0 WORK DAYS

RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	19.100
MED/BIO RESEARCH	191.000
S/C SYS - ELEC	9.550
S/C SYS - FLUIDS	9.550
SP STA SYS OPS	9.550

DURATION SUMMARY FOR PAYLOAD NO. 14 SL04 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	191.0

PAYLOAD WITH KEY SL05 CENTRIFUGE (ADD TO LSRF)

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 91.000

UPDATED WORK DURATION AT SP STA 91.0 WORK DAYS

RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	9.100
MED/BIO RESEARCH	91.000
S/C SYS - ELEC	4.550
S/C SYS - FLUIDS	4.550
SP STA SYS OPS	4.550

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DURATION SUMMARY FOR PAYLOAD NO. 15 SL05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 91.0

PAYLOAD WITH KEY CM01 MATLS SCIENCE LAB

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 300.000

UPDATED WORK DURATION AT SP STA 300.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 17 CM01 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 300.0

PAYLOAD WITH KEY CM02 CRYSTAL GROWTH FACTORY/PLAT

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 36.000
TEST & C/O = 1.944
TMS LAUNCH = 0.328
TMS OPS = 12.000
TMS CREW OPS = 12.000
TMS CAPTURE/BRTH = 0.168
TMS MAINT/REFUEL = 4.400
CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 18 CM02 154.7 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 61.471

S/C SYS - DATA 126.739

S/C SYS - ELEC 54.818

S/C SYS - MECH 125.800

S/C SYS - FLUIDS 44.206

SP STA SYS OPS 143.136

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EVA SERVICE TECH	56.952
TMS PILOT	254.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 18 CM02 IN MANDAYS/YR

SERVICING OPERATIONS	154.7
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM03 CRYSTAL GROWTH RESUP-1

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	12.000
TEST & C/O	=	1.458
TMS LAUNCH	=	0.246
TMS OPS	=	9.000
TMS CREW OPS	=	9.000
TMS CAPTURE/BRTH	=	0.126
TMS MAINT/REFUEL	=	3.300
CREW MOD MAINT	=	5.130

ADJUSTED SERVICING TIME FOR 19 CM03 84.5 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	30.353
S/C SYS - DATA	79.304
S/C SYS - ELEC	25.364
S/C SYS - MECH	78.600
S/C SYS - FLUIDS	17.404
SP STA SYS OPS	75.852
EVA SERVICE TECH	42.714
TMS PILOT	127.562

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 19 CM03 IN MANDAYS/YR

SERVICING OPERATIONS	84.5
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY SA03 ASTROPHYSICS FREE-FLYER

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SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	2.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 22 SA03 30.1 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	11.078
S/C SYS - DATA	36.574
S/C SYS - ELEC	6.355
S/C SYS - MECH	25.324
S/C SYS - FLUIDS	4.313
SP STA SYS OPS	33.323
EVA SERVICE TECH	14.238
TMS PILOT	34.121

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 22 SA03 IN MANDAYS/YR

SERVICING OPERATIONS	30.1
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY SA04 ASTROPHYSICS OBSERVATORIES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	6.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 23 SA04 38.5 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.278
S/C SYS - DATA	40.774
S/C SYS - ELEC	10.555
S/C SYS - MECH	29.524
S/C SYS - FLUIDS	8.513
SP STA SYS OPS	41.723
EVA SERVICE TECH	14.238
TMS PILOT	50.921

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 23 SA04 IN MANDAYS/YR

SERVICING OPERATIONS 38.5
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC03 INTELSAT-7,7A CLASS COMSAT

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 26 CC03 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC04 MULTIBEAM COMM. SATELLITE

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS

RESEARCH MISSION RESULTS

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CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 27 CC04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC05 RECONFIGURABLE COMM. SATELLITE

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 28 CC05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM05 CONT FLOW ELEC- TROPH PLATFORM

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

ADJUSTED SERVICING TIME FOR 29 CM05 0.0 DAYS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 29 CM05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM06 CONTINUOUS FLOW ELECTRO RESUPP

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	48.000
TEST & C/O	=	1.944
TMS LAUNCH	=	0.328
TMS OPS	=	12.000
TMS CREW OPS	=	12.000
TMS CAPTURE/BRTH	=	0.168
TMS MAINT/REFUEL	=	4.400

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CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 30 CM06 179.9 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	74.071
S/C SYS - DATA	139.339
S/C SYS - ELEC	67.418
S/C SYS - MECH	138.400
S/C SYS - FLUIDS	56.806
SP STA SYS OPS	168.336
EVA SERVICE TECH	56.952
TMS PILOT	304.483

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 30 CM06 IN MANDAYS/YR

SERVICING OPERATIONS	179.9
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM07 GLASS PROC PLANT

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 50.000

UPDATED WORK DURATION AT SP STA 50.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 31 CM07 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	50.0

PAYLOAD WITH KEY CM08 GLASSPROC OPTICA LFIBERS RESUPP

SATELLITE SERVICING OPERATIONS

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SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 8.000

UPDATED WORK DURATION AT SP STA 8.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 32 CM08 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 8.0

PAYLOAD WITH KEY OT01 LOW INCL STA MODULE DEL

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 33 OT01 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 67.200

SP STA SYS OPS 470.400

EVA CRANE OP 67.200

EVA SERVICE TECH 67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 33 OT01 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT02 LOW INCL STA RESUPPLY

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SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 34 OT02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY OT05 HI-ALT STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 35 OT05 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY TS02 TECH DEVEL CARRY-ONS

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 20.000

UPDATED WORK DURATION AT SP STA 20.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	4.000
ENGINEERING	20.000
S/C SYS - DATA	3.000
S/C SYS - ELEC	1.000
S/C SYS - MECH	1.000
S/C SYS - FLUIDS	4.000

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SP STA SYS OPS	2.000
EVA CRANE OP	1.000
EVA SERVICE TECH	1.000
MANNED OTV PILOT	3.000

DURATION SUMMARY FOR PAYLOAD NO. 45 TS02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	20.0

SKILL MIX SUMMARIES LOW INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	26.4	36.9	0.0	0.0	165.9	0.0	0.0	0.0	0.0	4.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	369.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	77.3	0.0	0.0	66.4	345.4	0.0	28.2	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	16.9	18.5	0.0	77.3	147.6	0.0	18.5	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	54.8	0.0	0.0	68.8	342.8	0.0	18.5	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	12.8	18.5	0.0	62.6	118.4	0.0	17.3	0.0	0.0	4.0	0.0	18.3	0.0	0.0	0.0
SP STA SYS OPS	0.0	75.0	18.5	0.0	112.6	387.3	0.0	106.0	0.0	0.0	2.0	0.0	125.8	470.4	0.0	0.0
EVA CRANE OP	0.0	0.0	0.0	0.0	83.5	0.0	0.0	36.1	0.0	0.0	1.0	0.0	80.6	67.2	0.0	0.0
EVA SERVICE TECH	0.0	28.5	0.0	0.0	119.7	156.6	0.0	29.4	0.0	0.0	1.0	0.0	80.6	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	106.3	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	85.0	0.0	0.0	0.0	686.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
838.	3302.	40.	977.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	300.4
MED/BIO RESEARCH	369.0
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	0.0
ENGINEERING	20.0
ASTROPHSICS	0.0
S/C SYS - DATA	520.4
S/C SYS - ELEC	279.8
S/C SYS - MECH	486.0
S/C SYS - FLUIDS	251.9
SP STA SYS OPS	1297.7
EVA CRANE OP	268.5

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EVA SERVICE TECH	483.0
MANNED OTV PILOT	109.3
TMS PILOT	771.2
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 14.1 PEOPLE

SKILL MIX SUMMARIES HIGH INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	0.5	27.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	54.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	155.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	67.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	0.0	13.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	0.1	13.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SP STA SYS OPS	2.5	4.2	13.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EVA CRANE OP	2.5	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.5	470.4	0.0	0.0
EVA SERVICE TECH	2.5	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
TMS PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
363.	0.	0.	704.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	95.3
MED/BIO RESEARCH	0.0
PHYS SCI RESEARC	54.0
EARTH, OCEAN OBS	155.0
ENGINEERING	0.0
ASTROPHSICS	67.0
S/C SYS - DATA	2.0
S/C SYS - ELEC	13.8
S/C SYS - MECH	0.2
S/C SYS - FLUIDS	13.9
SP STA SYS OPS	502.4
EVA CRANE OP	81.6
EVA SERVICE TECH	81.6
MANNED OTV PILOT	0.0
TMS PILOT	0.0
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 2.9 PEOPLE

LOW INCLINATION

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DURATION SUMMARY FOR YEAR 1996 IN MANDAYS/YR

STS OPERATIONS	69.3
CONSTRUCTION	53.0
OTV OPERATIONS	75.3
OTV MISSIONS	52.5
SERVICING OPERATIONS	823.8
SCIENCE & TECH DEMO	747.0

HIGH INCLINATION

DURATION SUMMARY FOR YEAR 1996 IN MANDAYS/YR

STS OPERATIONS	6.7
CONSTRUCTION	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0
SERVICING OPERATIONS	338.1
SCIENCE & TECH DEMO	276.0

SUMMARY OF SPACE STATION PAYLOADS THIS YEAR

KEY	TITLE	PLCODE	INCL	PK POWER	DUTY CYCLE
S001	EARTH OBSERV PALLET	SPCL	98.0	3.5	82.2
S002	SYNTH APERTURE RADAR	SPCL	98.0	10.0	2.7
OT03	SPACE STATION MODULES	SSSS	98.0	15.0	100.0
OT04	HI-INCL STATION RESUPPLY	SORS	98.0	1.0	100.0
SP01	SPACE SCIENCE SUBSATELLITE	FSXX	98.0	0.0	100.0
SP02	SPACE PHYSICS PALLET	SPCM	98.0	10.0	9.9
SA01	VLBI/COSMIC RAY PKG	SPCL	98.0	2.0	100.0
SL01	HUMAN LIFE SI CARRY-ONS	SSSA	29.0	1.7	100.0
SL03	PLANT DEVEL CARRY-ONS	SSSA	29.0	0.5	100.0
SL04	LIFESCIENCES RES FAC	SPXX	29.0	12.2	100.0
SL05	CENTRIFUGE (ADD TO LSRF)	SSCL	29.0	4.0	100.0

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CM01	MATLS SCIENCE LAB	SPXX	29.0	25.0	35.6
CM02	CRYSTAL GROWTH FACTORY/PLAT	PMCL	29.0	0.0	100.0
CM03	CRYSTAL GROWTH RESUP-1	PMXX	29.0	0.0	0.5
SA03	ASTROPHYSICS FREE-FLYER	FMXM	29.0	0.0	100.0
SA04	ASTROPHYSICS OBSERVATORIES	FMXM	29.0	1.0	100.0
CC03	INTELSAT-7,7A CLASS COMSAT	FXCL	0.0	0.0	0.0
CC04	MULTIBEAM COMM. SATELLITE	SSCM	0.0	0.0	0.0
CC05	RECONFIGURABLE COMM. SATELLITE	FXCM	0.0	0.0	1.9
CM05	CONT FLOW ELEC-TROPH PLATFORM	PMCL	29.0	0.0	100.0
CM06	CONTINUOUS FLOW ELECTRO RESUPP	PMXL	29.0	2.0	0.0
CM07	GLASS PROC PLANT	SPCL	29.0	10.6	100.0
CM08	GLASSPROC OPTICA LFIBERS RESUPP	SPCL	29.0	0.0	0.0
OT01	LOW INCL STA MODULE DEL	SSSS	29.0	20.0	100.0
OT02	LOW INCL STA RESUPPLY	SORS	29.0	0.0	100.0
OT05	HI-ALT STA RESUPPLY	OMSB	29.0	0.0	100.0
TS02	TECH DEVEL CARRY-ONS	SSSA	29.0	0.5	6.8

LOW INCLINATION

PEAK POWER	AVERAGE POWER
77.5	58.9

HIGH INCLINATION

PEAK POWER	AVERAGE POWER

41.5 22.1

RESOURCES SUMMARY FOR LOW INCLINATION SPACE STATION

INTERNAL VOLUME	6.4 CUBIC METERS
POWER	58.9 KW
NO. OF PORTS	4.

RESOURCES SUMMARY FOR HIGH INCLINATION SPACE STATION

INTERNAL VOLUME	6.5 CUBIC METERS
POWER	22.1 KW
NO. OF PORTS	4.

POINTING & DISTURBANCE SUMMARY FOR LOW INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350
SL01	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM01						----------	----------	----------	----------						
CM02	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM03								-							
SA03	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
SA04	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CC03								-							
CC04								-							
CC05								-							
CM05	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM06								-							
CM07	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM08								-							
OT01	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
OT02	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
OT05	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
TS02								-----							

POINTING & DISTURBANCE SUMMARY FOR HIGH INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

```
                  1   1   1   1   2   2   2   2   3   3   3
      2   5   7   0   2   5   7   0   2   5   7   0   2   5   0
  0   5   0   5   0   5   0   5   0   5   0   5   0   5   0
S001 0000000000000000000000000000000000000000000000000000000000000
S002 00
OT03 ---------------------------------------------------------------
OT04 ---------------------------------------------------------------
SP01 ---------------------------------------------------------------
SP02 0000000
SA01 ***************************************************************
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* * * SPACE STATION OPERATIONS ANALYSIS FOR YEAR 1997 * * *

TYPE #1 = 2 TYPE #2 = 3

***>> FLIGHT NO. 1
NUMBER OF FLIGHTS: 1 PRIME MISSION: **MULTIBEAM COMM SATELLITE OUTCOME # IS 0 KEY IS CC04
INCLINATION IS 0.00
CODE IS SSCM
SECOND MISSION: ROBOTICS TECH DEMO OUTCOME # IS 0
KEY IS TC01
CODE IS SSCM

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.651
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS 1.661

SP STA SYS OPS 7.555

EVA CRANE OP 5.040

EVA SERVICE TECH 5.040

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 8.756AWAY 4.200
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 6.987

S/C SYS - ELEC 9.160

S/C SYS - MECH 7.470

S/C SYS - FLUIDS 7.879

SP STA SYS OPS 14.452

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EVA CRANE OP	6.116
EVA SERVICE TECH	13.361
MANNED OTV PILOT	8.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.700
TEST & C/O	=	3.400
MODULE MATE	=	0.152
FAB STRUCT	=	0.246

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 11.650

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	5.776
S/C SYS - ELEC	3.730
S/C SYS - MECH	3.730
S/C SYS - FLUIDS	3.570
SP STA SYS OPS	23.299
EVA CRANE OP	8.502
EVA SERVICE TECH	5.562

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	11.6
OTV OPERATIONS	8.8
OTV MISSIONS	4.2

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
TEST & C/O	=	3.400

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 20.992

SECOND CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	11.488
S/C SYS - ELEC	7.300
S/C SYS - MECH	7.300
S/C SYS - FLUIDS	7.140

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SP STA SYS OPS 41.985

EVA CRANE OP 12.907

EVA SERVICE TECH 9.967

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	21.0
OTV OPERATIONS	8.8
OTV MISSIONS	4.2

TYPE #1 = 1 TYPE #2 = 4

***>> FLIGHT NO. 2
NUMBER OF FLIGHTS: 1 PRIME MISSION: UPPER ATMOS RESEARCH PKG OUTCOME # IS 0 KEY IS SO04
INCLINATION IS 98.00
CODE IS SPCL
SECOND MISSION: HI-INCL STATION RESUPPLY OUTCOME # IS 0
KEY IS OT04
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 7.998

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.140
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 2.012
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 0.848

S/C SYS - ELEC 0.590

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S/C SYS - MECH	0.590
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	4.024
EVA CRANE OP	1.982
EVA SERVICE TECH	1.394

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	2.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	2.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 3
NUMBER OF FLIGHTS: 1 PRIME MISSION: **CRYSTAL GROWTH FACTORY/PLAT OUTCOME # IS 0 KEY IS CM02
INCLINATION IS 29.00
CODE IS PMCL
SECOND MISSION: TMS CAB DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS

ORBITER ARRIVE	=	0.0416	
ORBITER OFFLOAD	=	0.6000	
ORBITER OFFLOAD	=	0.6000	(MISSION 2)
ORBITER RELOAD	=	0.6000	(MISSION 2)
ORBITER DEPART	=	0.0210	
ORBITER PROP XFR	=	0.3792	

ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911

STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - FLUIDS	1.593
SP STA SYS OPS	9.989
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

CONSTRUCTION OPERATIONS

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UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.718
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	0.848
S/C SYS - ELEC	0.590
S/C SYS - MECH	0.590
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	3.436
EVA CRANE OP	1.394
EVA SERVICE TECH	1.394

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 3 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 4
NUMBER OF FLIGHTS: 1 PRIME MISSION: **INTELSAT-7,7A CLASS COMSAT OUTCOME # IS 0 KEY IS CC03
INCLINATION IS 0.00
CODE IS FXCL
SECOND MISSION: TMS CAB DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS	1.661
SP STA SYS OPS	10.075
EVA CRANE OP	7.560

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OF POOR QUALITY

EVA SERVICE TECH	7.560

OTV OPERATIONS

UNADJUSTED DURATIONS

MAINTAIN STAGE	=	1.150
MATE TO PAYLD	=	0.131
STAGE/STAGE MATE	=	0.210
OTV/PLD C/O	=	0.555
LAUNCH	=	0.082
CAPTURE	=	0.042
MISSION OPS	=	2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 8.756AWAY 4.200

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	6.987
S/C SYS - ELEC	9.160
S/C SYS - MECH	7.470
S/C SYS - FLUIDS	7.879
SP STA SYS OPS	16.972
EVA CRANE OP	8.636
EVA SERVICE TECH	15.881
MANNED OTV PILOT	8.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.200
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.280
TEST & C/O	=	0.486

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 2.146

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	0.816
S/C SYS - ELEC	0.510
S/C SYS - MECH	0.510
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	4.292
EVA CRANE OP	2.251

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EVA SERVICE TECH 1.075

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 4 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	2.1
OTV OPERATIONS	8.8
OTV MISSIONS	4.2

TYPE #1 = 1 TYPE #2 = 2

***>> FLIGHT NO. 5
NUMBER OF FLIGHTS: 1 PRIME MISSION: **CLOSED ENV LSS EXPT MOD OUTCOME # IS 0 KEY IS SL06
INCLINATION IS 29.00
CODE IS SPCL
SECOND MISSION: RECONFIGURABLE COMM. SATELLITE OUTCOME # IS 0
KEY IS CC05
CODE IS FXCM

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.651
STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - FLUIDS	1.661
SP STA SYS OPS	7.555
EVA CRANE OP	5.040
EVA SERVICE TECH	5.040

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 7.000

ADJ OTV OP DURATION FOR SECOND MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 19.256AWAY 14.700
SECOND MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - DATA	17.487

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S/C SYS - ELEC	19.660
S/C SYS - MECH	17.970
S/C SYS - FLUIDS	18.379
SP STA SYS OPS	14.452
EVA CRANE OP	6.116
EVA SERVICE TECH	13.361
MANNED OTV PILOT	29.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.718
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	0.848
S/C SYS - ELEC	0.590
S/C SYS - MECH	0.590
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	3.436
EVA CRANE OP	1.394
EVA SERVICE TECH	1.394

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 5 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	1.7
OTV OPERATIONS	19.3
OTV MISSIONS	14.7

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.993
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.140
TEST & C/O = 3.400
MODULE MATE = 0.152

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 11.674
SECOND MISSION RESULTS
CREW SKILL MANDAYS

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S/C SYS - DATA	6.624
S/C SYS - ELEC	4.320
S/C SYS - MECH	4.320
S/C SYS - FLUIDS	4.080
SP STA SYS OPS	23.348
EVA CRANE OP	7.027
EVA SERVICE TECH	6.439

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 5 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	11.7
OTV OPERATIONS	19.3
OTV MISSIONS	14.7

TYPE #1 = 2 TYPE #2 = 2

***>> FLIGHT NO. 6
NUMBER OF FLIGHTS: 3 PRIME MISSION: **RECONFIGURABLE COMM. SATELLI OUTCOME # IS 0 KEY IS CC05
INCLINATION IS 0.00
CODE IS FXCM
SECOND MISSION: CRYSTAL GROWTH RESUP-2 OUTCOME # IS 0
KEY IS CM04
CODE IS PMCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3629
ADJ STS DURATION AT SP STA FOR TOTAL OF 3 FLIGHTS: 7.954
STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - FLUIDS	4.573
SP STA SYS OPS	22.152
EVA CRANE OP	15.120
EVA SERVICE TECH	15.120

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210

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OTV/PLD C/O	=	0.555
LAUNCH	=	0.082
CAPTURE	=	0.042
MISSION OPS	=	7.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 3 FLIGHTS:
AT SPACE STA 57.768AWAY 44.100

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	52.460
S/C SYS - ELEC	58.981
S/C SYS - MECH	53.909
S/C SYS - FLUIDS	54.727
SP STA SYS OPS	42.845
EVA CRANE OP	18.348
EVA SERVICE TECH	40.083
MANNED OTV PILOT	88.979

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.140
TEST & C/O	=	3.400
MODULE MATE	=	0.152

ADJUSTED DUR FOR 3 FLIGHTS, AT SPACE STATION 29.868

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	17.328
S/C SYS - ELEC	11.189
S/C SYS - MECH	11.189
S/C SYS - FLUIDS	10.710
SP STA SYS OPS	59.737
EVA CRANE OP	16.897
EVA SERVICE TECH	15.133

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 6 IN MANDAYS/YR

STS OPERATIONS	8.0
CONSTRUCTION OPERATIONS	29.9

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OTV OPERATIONS 57.8
OTV MISSIONS 44.1

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 3 FLIGHTS, AT SPACE STATION 35.022
SECOND MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 19.873

S/C SYS - ELEC 12.959

S/C SYS - MECH 12.959

S/C SYS - FLUIDS 12.241

SP STA SYS OPS 70.043

EVA CRANE OP 21.080

EVA SERVICE TECH 19.316

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 6 IN MANDAYS/YR

STS OPERATIONS 8.0
CONSTRUCTION OPERATIONS 35.0
OTV OPERATIONS 57.8
OTV MISSIONS 44.1

TYPE #1 = 4 TYPE #2 = 4

***>> FLIGHT NO. 7
NUMBER OF FLIGHTS: 1 PRIME MISSION: RADIO OUTCOME # IS 0 KEY IS NONE
INCLINATION IS 0.00
SECOND MISSION: TMS DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 5.171
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS 1.661

SP STA SYS OPS 12.595

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EVA CRANE OP 10.080

EVA SERVICE TECH 10.080

CONSTRUCTION OPERATIONS

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 8
NUMBER OF FLIGHTS: 1 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL
SECOND MISSION: TMS PROP DELIV OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.999
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 8.261

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 8 IN MANDAYS/YR

STS OPERATIONS	4.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 9
NUMBER OF FLIGHTS: 11 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 11 FLIGHTS: 16.267
STS OPERATIONS MISSION RESULTS

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CREW SKILL	MANDAYS
SP STA SYS OPS	35.426
EVA CRANE OP	27.720
EVA SERVICE TECH	27.720

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 9 IN MANDAYS/YR

STS OPERATIONS	16.3
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 10
NUMBER OF FLIGHTS: 4 PRIME MISSION: GLASSPROC OPTICA LFIBERS RESUPP OUTCOME # IS 0 KEY IS CM08
INCLINATION IS 29.00
CODE IS SPCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 4 FLIGHTS: 5.915
STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
SP STA SYS OPS	12.882
EVA CRANE OP	10.080
EVA SERVICE TECH	10.080

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.070
TEST & C/O = 0.486
MODULE MATE = 0.152

ADJUSTED DUR FOR 4 FLIGHTS, AT SPACE STATION 8.098
FIRST MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - DATA	3.521
S/C SYS - ELEC	2.680

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S/C SYS - MECH 2.680

S/C SYS - FLUIDS 2.041

SP STA SYS OPS 16.195

EVA CRANE OP 8.030

EVA SERVICE TECH 6.854

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 10 IN MANDAYS/YR

STS OPERATIONS	5.9
CONSTRUCTION OPERATIONS	8.1
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 11
NUMBER OF FLIGHTS: 8 PRIME MISSION: LOW INCL STA RESUPPLY OUTCOME # IS 0 KEY IS OT02
INCLINATION IS 29.00
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 8 FLIGHTS: 21.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 45.924

EVA CRANE OP 40.320

EVA SERVICE TECH 40.320

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 11 IN MANDAYS/YR

STS OPERATIONS	21.9
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 12
NUMBER OF FLIGHTS: 1 PRIME MISSION: HI-INCL STATION RESUPPLY OUTCOME # IS 0 KEY IS OT04
INCLINATION IS 98.00

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CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.739
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	5.741
EVA CRANE OP	5.040
EVA SERVICE TECH	5.040

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 12 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

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PAYLOADS SERVICING ANALYSIS

PAYLOAD WITH KEY S001 EARTH OBSERV PALLET

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 150.000

UPDATED WORK DURATION AT SP STA 150.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.000
EARTH, OCEAN OBS	150.000
S/C SYS - ELEC	7.500
S/C SYS - FLUIDS	7.500
SP STA SYS OPS	7.500

DURATION SUMMARY FOR PAYLOAD NO. 1 S001 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	150.0

PAYLOAD WITH KEY S002 SYNTH APERTURE RADAR

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 5.000

UPDATED WORK DURATION AT SP STA 5.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	0.500
EARTH, OCEAN OBS	5.000
S/C SYS - ELEC	0.250
S/C SYS - FLUIDS	0.250

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SP STA SYS OPS 0.250

DURATION SUMMARY FOR PAYLOAD NO. 2 S002 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 5.0

PAYLOAD WITH KEY S004 UPPER ATMOS RESEARCH PKG

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 145.000

UPDATED WORK DURATION AT SP STA 145.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 14.500

EARTH, OCEAN OBS 145.000

S/C SYS - ELEC 7.250

S/C SYS - FLUIDS 7.250

SP STA SYS OPS 7.250

DURATION SUMMARY FOR PAYLOAD NO. 4 S004 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 145.0

PAYLOAD WITH KEY OT03 SPACE STATION MODULES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 5 OT03 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 67.200

SP STA SYS OPS 470.400

EVA CRANE OP 67.200

EVA SERVICE TECH 67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 5 OT03 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT04 HI-INCL STATION RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 6 OT04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SP01 SPACE SCIENCE SUBSATELLITE

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
TMS MATE/DEMATE = 0.260

ADJUSTED SERVICING TIME FOR 7 SP01 2.1 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 0.510

S/C SYS - DATA 2.041

S/C SYS - MECH 0.204

S/C SYS - FLUIDS 0.102

SP STA SYS OPS 4.208

EVA CRANE OP 1.807

EVA SERVICE TECH 1.807

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 7 SP01 IN MANDAYS/YR

SERVICING OPERATIONS 2.1
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SA01 VLBI/COSMIC RAY PKG

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 67.000

UPDATED WORK DURATION AT SP STA 67.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 6.700

ASTROPHSICS 67.000

S/C SYS - ELEC 3.350

S/C SYS - FLUIDS 3.350

SP STA SYS OPS 3.350

DURATION SUMMARY FOR PAYLOAD NO. 9 SA01 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 67.0

PAYLOAD WITH KEY SL08 RAD BIOLOGY IN SM MAMMALS

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 30.000

UPDATED WORK DURATION AT SP STA 30.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	3.000
MED/BIO RESEARCH	30.000
S/C SYS - ELEC	1.500
S/C SYS - FLUIDS	1.500
SP STA SYS OPS	1.500

DURATION SUMMARY FOR PAYLOAD NO. 10 SL08 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	30.0

PAYLOAD WITH KEY SL01 HUMAN LIFE SI CARRY-ONS

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 73.000

UPDATED WORK DURATION AT SP STA 73.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	7.300
MED/BIO RESEARCH	73.000
S/C SYS - ELEC	3.650
S/C SYS - FLUIDS	3.650
SP STA SYS OPS	3.650

DURATION SUMMARY FOR PAYLOAD NO. 11 SL01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	73.0

PAYLOAD WITH KEY SL04 LIFESCIENCES RES FAC

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 191.000

UPDATED WORK DURATION AT SP STA 191.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 19.100

MED/BIO RESEARCH 191.000

S/C SYS - ELEC 9.550

S/C SYS - FLUIDS 9.550

SP STA SYS OPS 9.550

DURATION SUMMARY FOR PAYLOAD NO. 14 SL04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 191.0

PAYLOAD WITH KEY SL05 CENTRIFUGE (ADD TO LSRF)

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 91.000

UPDATED WORK DURATION AT SP STA 91.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 9.100

MED/BIO RESEARCH 91.000

S/C SYS - ELEC 4.550

S/C SYS - FLUIDS 4.550

SP STA SYS OPS 4.550

DURATION SUMMARY FOR PAYLOAD NO. 15 SL05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 91.0

PAYLOAD WITH KEY SL06 CLOSED ENV LSS EXPT MOD

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 547.500

UPDATED WORK DURATION AT SP STA 547.5 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 54.750

MED/BIO RESEARCH 547.500

S/C SYS - ELEC 27.375

S/C SYS - FLUIDS 27.375

SP STA SYS OPS 27.375

DURATION SUMMARY FOR PAYLOAD NO. 16 SL06 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 547.5

PAYLOAD WITH KEY CM01 MATLS SCIENCE LAB

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 300.000

UPDATED WORK DURATION AT SP STA 300.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 17 CM01 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 300.0

PAYLOAD WITH KEY CM02 CRYSTAL GROWTH FACTORY/PLAT

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	36.000
TEST & C/O	=	1.944
TMS LAUNCH	=	0.328
TMS OPS	=	12.000
TMS CREW OPS	=	12.000
TMS CAPTURE/BRTH	=	0.168
TMS MAINT/REFUEL	=	4.400
CREW MOD MAINT	=	6.840

ADJUSTED SERVICING TIME FOR 18 CM02 154.7 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	61.471
S/C SYS - DATA	126.739
S/C SYS - ELEC	54.818
S/C SYS - MECH	125.800
S/C SYS - FLUIDS	44.206
SP STA SYS OPS	143.136
EVA SERVICE TECH	56.952
TMS PILOT	254.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 18 CM02 IN MANDAYS/YR

SERVICING OPERATIONS	154.7
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM03 CRYSTAL GROWTH RESUP-1

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	12.000
TEST & C/O	=	1.458
TMS LAUNCH	=	0.246
TMS OPS	=	9.000
TMS CREW OPS	=	9.000
TMS CAPTURE/BRTH	=	0.126
TMS MAINT/REFUEL	=	3.300
CREW MOD MAINT	=	5.130

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ADJUSTED SERVICING TIME FOR 19 CM03 84.5 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	30.353
S/C SYS - DATA	79.304
S/C SYS - ELEC	25.364
S/C SYS - MECH	78.600
S/C SYS - FLUIDS	17.404
SP STA SYS OPS	75.852
EVA SERVICE TECH	42.714
TMS PILOT	127.562

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 19 CM03 IN MANDAYS/YR

SERVICING OPERATIONS	84.5
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM04 CRYSTAL GROWTH RESUP-2

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	16.000
TEST & C/O	=	1.944
TMS LAUNCH	=	0.328
TMS OPS	=	12.000
TMS CREW OPS	=	12.000
TMS CAPTURE/BRTH	=	0.168
TMS MAINT/REFUEL	=	4.400
CREW MOD MAINT	=	6.840

ADJUSTED SERVICING TIME FOR 20 CM04 112.7 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	40.471
S/C SYS - DATA	105.739
S/C SYS - ELEC	33.818
S/C SYS - MECH	104.800
S/C SYS - FLUIDS	23.206
SP STA SYS OPS	101.136

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EVA SERVICE TECH	56.952
TMS PILOT	170.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 20 CM04 IN MANDAYS/YR

SERVICING OPERATIONS	112.7
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY SA03 ASTROPHYSICS FREE-FLYER

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	2.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 22 SA03 30.1 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	11.078
S/C SYS - DATA	36.574
S/C SYS - ELEC	6.355
S/C SYS - MECH	25.324
S/C SYS - FLUIDS	4.313
SP STA SYS OPS	33.323
EVA SERVICE TECH	14.238
TMS PILOT	34.121

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 22 SA03 IN MANDAYS/YR

SERVICING OPERATIONS	30.1
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY SA04 ASTROPHYSICS OBSERVATORIES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	6.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 23 SA04 38.5 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.278
S/C SYS - DATA	40.774
S/C SYS - ELEC	10.555
S/C SYS - MECH	29.524
S/C SYS - FLUIDS	8.513
SP STA SYS OPS	41.723
EVA SERVICE TECH	14.238
TMS PILOT	50.921

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 23 SA04 IN MANDAYS/YR

SERVICING OPERATIONS	38.5
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CC03 INTELSAT-7,7A CLASS COMSAT

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 26 CC03 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CC04 MULTIBEAM COMM. SATELLITE

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 27 CC04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC05 RECONFIGURABLE COMM. SATELLITE

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 28 CC05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM05 CONT FLOW ELEC- TROPH PLATFORM

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

ADJUSTED SERVICING TIME FOR 29 CM05 0.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 29 CM05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0

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SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM06 CONTINUOUS FLOW ELECTRO RESUPP

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 48.000
TEST & C/O = 1.944
TMS LAUNCH = 0.328
TMS OPS = 12.000
TMS CREW OPS = 12.000
TMS CAPTURE/BRTH = 0.168
TMS MAINT/REFUEL = 4.400
CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 30 CM06 179.9 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	74.071
S/C SYS - DATA	139.339
S/C SYS - ELEC	67.418
S/C SYS - MECH	138.400
S/C SYS - FLUIDS	56.806
SP STA SYS OPS	168.336
EVA SERVICE TECH	56.952
TMS PILOT	304.483

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 30 CM06 IN MANDAYS/YR

SERVICING OPERATIONS 179.9
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM07 GLASS PROC PLANT

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 50.000

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UPDATED WORK DURATION AT SP STA 50.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 31 CM07 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 50.0

PAYLOAD WITH KEY CM08 GLASSPROC OPTICA LFIBERS RESUPP

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 8.000

UPDATED WORK DURATION AT SP STA 8.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 32 CM08 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 8.0

PAYLOAD WITH KEY OT01 LOW INCL STA MODULE DEL

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 33 OT01 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 67.200

SP STA SYS OPS 470.400

EVA CRANE OP 67.200

EVA SERVICE TECH 67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

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UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 33 OT01 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT02 LOW INCL STA , RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 34 OT02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT05 HI-ALT STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 35 OT05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY TC01 ROBOTICS TECH DEMO

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 90.000

UPDATED WORK DURATION AT SP STA 90.0 WORK DAYS
RESEARCH MISSION RESULTS

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CREW SKILL	MANDAYS
NO SPECIAL SKILL	18.000
ENGINEERING	90.000
S/C SYS - DATA	13.500
S/C SYS - ELEC	4.500
S/C SYS - MECH	4.500
S/C SYS - FLUIDS	18.000
SP STA SYS OPS	9.000
EVA CRANE OP	4.500
EVA SERVICE TECH	4.500
MANNED OTV PILOT	13.500

DURATION SUMMARY FOR PAYLOAD NO. 41 TC01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	90.0

PAYLOAD WITH KEY TS02 TECH DEVEL · CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

DOD/TECH DEV = 20.000

UPDATED WORK DURATION AT SP STA 20.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	4.000
ENGINEERING	20.000
S/C SYS - DATA	3.000
S/C SYS - ELEC	1.000
S/C SYS - MECH	1.000
S/C SYS - FLUIDS	4.000
SP STA SYS OPS	2.000

EVA CRANE OP	1.000
EVA SERVICE TECH	1.000
MANNED OTV PILOT	3.000

DURATION SUMMARY FOR PAYLOAD NO. 45 TS02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	20.0

SKILL MIX SUMMARIES LOW INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	26.4	90.3	0.0	0.0	206.4	0.0	0.0	0.0	0.0	22.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	902.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	110.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	77.3	0.0	1.7	83.9	451.1	0.0	59.7	0.0	0.0	16.5	5.7	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	16.9	45.1	1.2	97.0	181.4	0.0	39.1	0.0	0.0	5.5	3.6	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	54.8	0.0	1.2	86.8	447.6	0.0	39.1	0.0	0.0	5.5	3.6	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	12.8	45.1	1.0	79.3	141.6	0.0	36.7	0.0	0.0	22.0	3.6	22.4	0.0	0.0	0.0
SP STA SYS OPS	5.0	75.0	45.1	6.9	129.6	488.5	0.0	220.2	5.0	0.0	11.0	18.7	121.5	470.4	0.0	0.0
EVA CRANE OP	5.0	0.0	0.0	2.8	94.7	0.0	0.0	72.3	5.0	0.0	5.5	4.4	70.6	67.2	0.0	0.0
EVA SERVICE TECH	5.0	28.5	0.0	2.8	138.1	213.6	0.0	59.9	5.0	0.0	5.5	4.4	70.6	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	136.0	0.0	0.0	0.0	0.0	0.0	16.5	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	85.0	0.0	0.0	0.0	856.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
1538.	4359.	279.	957.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	412.2
MED/BIO RESEARCH	902.5
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	0.0
ENGINEERING	110.0
ASTROPHSICS	0.0
S/C SYS - DATA	696.0
S/C SYS - ELEC	389.8
S/C SYS - MECH	638.6
S/C SYS - FLUIDS	364.6
SP STA SYS OPS	1596.9
EVA CRANE OP	327.5
EVA SERVICE TECH	600.6
MANNED OTV PILOT	152.5

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TMS PILOT	941.3
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 19.5 PEOPLE

SKILL MIX SUMMARIES HIGH INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	0.5	39.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	300.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	67.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	2.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	0.0	19.9	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	0.2	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	0.1	19.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SP STA SYS OPS	2.5	4.2	19.9	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
EVA CRANE OP	2.5	1.8	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	470.4	0.0	0.0
EVA SERVICE TECH	2.5	1.8	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
TMS PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
524.	0.	0.	703.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	107.4
MED/BIO RESEARCH	30.0
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	300.0
ENGINEERING	0.0
ASTROPHSICS	67.0
S/C SYS - DATA	2.9
S/C SYS - ELEC	20.4
S/C SYS - MECH	0.8
S/C SYS - FLUIDS	20.5
SP STA SYS OPS	512.2
EVA CRANE OP	83.6
EVA SERVICE TECH	83.0
MANNED OTV PILOT	0.0
TMS PILOT	0.0
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 3.4 PEOPLE

LOW INCLINATION

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DURATION SUMMARY FOR YEAR 1997 IN MANDAYS/YR

STS OPERATIONS	74.3
CONSTRUCTION	122.9
OTV OPERATIONS	94.5
OTV MISSIONS	67.2
SERVICING OPERATIONS	936.5
SCIENCE & TECH DEMO	1370.5

HIGH INCLINATION

DURATION SUMMARY FOR YEAR 1997 IN MANDAYS/YR

STS OPERATIONS	6.7
CONSTRUCTION	2.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0
SERVICING OPERATIONS	338.1
SCIENCE & TECH DEMO	397.0

SUMMARY OF SPACE STATION PAYLOADS THIS YEAR

KEY	TITLE	PLCODE	INCL	PK POWER	DUTY CYCLE
S001	EARTH OBSERV PALLET	SPCL	98.0	3.5	82.2
S002	SYNTH APERTURE RADAR	SPCL	98.0	10.0	2.7
S004	UPPER ATMOS RESEARCH PKG	SPCL	98.0	2.2	54.8
OT03	SPACE STATION MODULES	SSSS	98.0	15.0	100.0
OT04	HI-INCL STATION RESUPPLY	SORS	98.0	1.0	100.0
SP01	SPACE SCIENCE SUBSATELLITE	FSXX	98.0	0.0	100.0
SA01	VLBI/COSMIC RAY PKG	SPCL	98.0	2.0	100.0
SL08	RAD BIOLOGY IN SM MAMMALS	SSSA	98.0	0.6	100.0
SL01	HUMAN LIFE SI CARRY-ONS	SSSA	29.0	1.7	100.0
SL04	LIFESCIENCES RES FAC	SPXX	29.0	12.2	100.0
SL05	CENTRIFUGE (ADD TO LSRF)	SSCL	29.0	4.0	100.0

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SL06	CLOSED ENV LSS EXPT MOD	SPCL	29.0	9.7	100.0
CM01	MATLS SCIENCE LAB	SPXX	29.0	25.0	35.6
CM02	CRYSTAL GROWTH FACTORY/PLAT	PMCL	29.0	0.0	100.0
CM03	CRYSTAL GROWTH RESUP-1	PMXX	29.0	0.0	0.5
CM04	CRYSTAL GROWTH RESUP-2	PMCL	29.0	0.0	0.5
SA03	ASTROPHYSICS FREE-FLYER	FMXM	29.0	0.0	100.0
SA04	ASTROPHYSICS OBSERVATORIES	FMXM	29.0	1.0	100.0
CC03	INTELSAT-7,7A CLASS COMSAT	FXCL	0.0	0.0	0.0
CC04	MULTIBEAM COMM. SATELLITE	SSCM	0.0	0.0	0.0
CC05	RECONFIGURABLE COMM. SATELLITE	FXCM	0.0	0.0	1.9
CM05	CONT FLOW ELEC-TROPH PLATFORM	PMCL	29.0	0.0	100.0
CM06	CONTINUOUS FLOW ELECTRO RESUPP	PMXL	29.0	2.0	0.0
CM07	GLASS PROC PLANT	SPCL	29.0	10.6	100.0
CM08	GLASSPROC OPTICA LFIBERS RESUPP	SPCL	29.0	0.0	0.0
OT01	LOW INCL STA MODULE DEL	SSSS	29.0	20.0	100.0
OT02	LOW INCL STA RESUPPLY	SORS	29.0	0.0	100.0
OT05	HI-ALT STA RESUPPLY	OMSB	29.0	0.0	100.0
TC01	ROBOTICS TECH DEMO	SSCM	29.0	3.0	24.7
TS02	TECH DEVEL CARRY-ONS	SSSA	29.0	0.5	6.8

LOW INCLINATION

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PEAK POWER	AVERAGE POWER
89.7	68.9

HIGH INCLINATION

PEAK POWER	AVERAGE POWER
34.3	22.9

RESOURCES SUMMARY FOR LOW INCLINATION SPACE STATION

INTERNAL VOLUME	5.4 CUBIC METERS
POWER	68.9 KW
NO. OF PORTS	5.

RESOURCES SUMMARY FOR HIGH INCLINATION SPACE STATION

INTERNAL VOLUME	5.8 CUBIC METERS
POWER	22.9 KW
NO. OF PORTS	4.

POINTING & DISTURBANCE SUMMARY FOR LOW INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350
SL01	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM01						----------	----------	----------	----------						
CM02	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM03								-							
CM04								-							
SA03	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
SA04	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CC03								-							
CC04								-							
CC05								-							
CM05	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM06								-							
CM07	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM08								-							
OT01	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
OT02	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
OT05	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
TC01						----------	----------	----------	----------						
TS02								-----							

POINTING & DISTURBANCE SUMMARY FOR HIGH INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

```
                          1   1   1   1   2   2   2   2   3   3   3
      2   5   7   1   1   2   5   7   0   2   5   7   0   2   5
  0   5   0   5   0   5   0   5   0   5   0   5   0   5   0
S001 00000000000000000000000000000000000000000000000000000000000000
S002 00
S004 0000000000000000000000000000000000000000
OT03 ------------------------------------------------------------------------
OT04 ------------------------------------------------------------------------
SP01 ------------------------------------------------------------------------
SA01 ************************************************************************
SL08 ------------------------------------------------------------------------
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* * * SPACE STATION OPERATIONS ANALYSIS FOR YEAR 1998 * * *

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 1
NUMBER OF FLIGHTS: 1 PRIME MISSION: **MULTIBEAM COMM SATELLITE OUTCOME # IS 0 KEY IS CC04
INCLINATION IS 0.00
CODE IS SSCM
SECOND MISSION: TMS PROP DELIV OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - FLUIDS	1.661
SP STA SYS OPS	10.075
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 8.756AWAY 4.200
FIRST MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - DATA	6.987
S/C SYS - ELEC	9.160
S/C SYS - MECH	7.470
S/C SYS - FLUIDS	7.879
SP STA SYS OPS	16.972
EVA CRANE OP	8.636

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EVA SERVICE TECH 15.881

MANNED OTV PILOT 8.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.993
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.700
TEST & C/O = 3.400
MODULE MATE = 0.152
FAB STRUCT = 0.246

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 11.650
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 5.776

S/C SYS - ELEC 3.730

S/C SYS - MECH 3.730

S/C SYS - FLUIDS 3.570

SP STA SYS OPS 23.299

EVA CRANE OP 8.502

EVA SERVICE TECH 5.562

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	11.6
OTV OPERATIONS	8.8
OTV MISSIONS	4.2

TYPE #1 = 4 TYPE #2 = 1

***>> FLIGHT NO. 2
NUMBER OF FLIGHTS: 1 PRIME MISSION: HI-INCL STATION RESUPPLY OUTCOME # IS 0 KEY IS OT04
INCLINATION IS 98.00
CODE IS SORS
SECOND MISSION: HETERODYNING CO2 LIDAR OUTCOME # IS 0
KEY IS SO03
CODE IS SPXX

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210

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ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.999
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 8.261

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS	4.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS	4.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 3
NUMBER OF FLIGHTS: 1 PRIME MISSION: **INTELSAT-7,7A CLASS COMSAT OUTCOME # IS 0 KEY IS CC03
INCLINATION IS 0.00
CODE IS FXCL
SECOND MISSION: TMS CAB DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS 1.661

SP STA SYS OPS 10.075

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

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OTV OPERATIONS

UNADJUSTED DURATIONS

MAINTAIN STAGE	=	1.150
MATE TO PAYLD	=	0.131
STAGE/STAGE MATE	=	0.210
OTV/PLD C/O	=	0.555
LAUNCH	=	0.082
CAPTURE	=	0.042
MISSION OPS	=	2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 8.756AWAY 4.200

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	6.987
S/C SYS - ELEC	9.160
S/C SYS - MECH	7.470
S/C SYS - FLUIDS	7.879
SP STA SYS OPS	16.972
EVA CRANE OP	8.636
EVA SERVICE TECH	15.881
MANNED OTV PILOT	8.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.200
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.280
TEST & C/O	=	0.486

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 2.146

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	0.816
S/C SYS - ELEC	0.510
S/C SYS - MECH	0.510
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	4.292
EVA CRANE OP	2.251
EVA SERVICE TECH	1.075

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DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 3 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	2.1
OTV OPERATIONS	8.8
OTV MISSIONS	4.2

TYPE #1 = 2 TYPE #2 = 2

***>> FLIGHT NO. 4
NUMBER OF FLIGHTS: 4 PRIME MISSION: **RECONFIGURABLE COMM. SATELLI OUTCOME # IS 0 KEY IS CC05
INCLINATION IS 0.00
CODE IS FXCM
SECOND MISSION: CRYSTAL GROWTH RESUP-2 OUTCOME # IS 0
KEY IS CM04
CODE IS PMCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3629
ADJ STS DURATION AT SP STA FOR TOTAL OF 4 FLIGHTS: 10.606
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS	6.097
SP STA SYS OPS	29.536
EVA CRANE OP	20.160
EVA SERVICE TECH	20.160

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 7.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 4 FLIGHTS:
AT SPACE STA 77.025AWAY 58.800
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	69.947
S/C SYS - ELEC	78.641

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S/C SYS - MECH	71.879
S/C SYS - FLUIDS	72.970
SP STA SYS OPS	57.127
EVA CRANE OP	24.464
EVA SERVICE TECH	53.444
MANNED OTV PILOT	118.638

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.140
TEST & C/O	=	3.400
MODULE MATE	=	0.152

ADJUSTED DUR FOR 4 FLIGHTS, AT SPACE STATION 39.824

FIRST MISSION RESULTS CREW SKILL	MANDAYS
S/C SYS - DATA	23.103
S/C SYS - ELEC	14.918
S/C SYS - MECH	14.918
S/C SYS - FLUIDS	14.280
SP STA SYS OPS	79.649
EVA CRANE OP	22.529
EVA SERVICE TECH	20.177

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 4 IN MANDAYS/YR

STS OPERATIONS	10.6
CONSTRUCTION OPERATIONS	39.8
OTV OPERATIONS	77.0
OTV MISSIONS	58.8

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.200
MATE TO FIXT	=	0.056
TEST & C/O	=	0.486
MODULE MATE	=	0.076

ADJUSTED DUR FOR 4 FLIGHTS, AT SPACE STATION 46.696

SECOND MISSION RESULTS CREW SKILL	MANDAYS
S/C SYS - DATA	26.497

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S/C SYS - ELEC	17.279
S/C SYS - MECH	17.279
S/C SYS - FLUIDS	16.321
SP STA SYS OPS	93.391
EVA CRANE OP	28.106
EVA SERVICE TECH	25.754

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 4 IN MANDAYS/YR

STS OPERATIONS	10.6
CONSTRUCTION OPERATIONS	46.7
OTV OPERATIONS	77.0
OTV MISSIONS	58.8

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 5
NUMBER OF FLIGHTS: 1 PRIME MISSION: HI-INCL STATION RESUPPLY OUTCOME # IS 0 KEY IS OT04
INCLINATION IS 98.00
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.651
STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
SP STA SYS OPS	5.478
EVA CRANE OP	5.040
EVA SERVICE TECH	5.040

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 5 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 6

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NUMBER OF FLIGHTS: 1 PRIME MISSION: RADIO OUTCOME # IS 0 KEY IS NONE
INCLINATION IS 0.00

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3467
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.651
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS	1.456
SP STA SYS OPS	7.299
EVA CRANE OP	5.040
EVA SERVICE TECH	5.040

CONSTRUCTION OPERATIONS

TYPE #1 = 1 TYPE #2 = 0

***>> FLIGHT NO. 7
NUMBER OF FLIGHTS: 1 PRIME MISSION: ASTRO TELESCOPE CLUSTER OUTCOME # IS 0 KEY IS SA02
INCLINATION IS 29.00
CODE IS SPXX

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.2004
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 1.391
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS	0.842
SP STA SYS OPS	4.011
EVA CRANE OP	2.520
EVA SERVICE TECH	2.520

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 7 IN MANDAYS/YR

STS OPERATIONS 1.4

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CONSTRUCTION OPERATIONS 0.0
OTV OPERATIONS 0.0
OTV MISSIONS 0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 8
NUMBER OF FLIGHTS: 14 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 14 FLIGHTS: 19.480
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 41.419

EVA CRANE OP 35.280

EVA SERVICE TECH 35.280

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 8 IN MANDAYS/YR

STS OPERATIONS 19.5
CONSTRUCTION OPERATIONS 0.0
OTV OPERATIONS 0.0
OTV MISSIONS 0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 9
NUMBER OF FLIGHTS: 5 PRIME MISSION: GLASSPROC OPTICA LFIBERS RESUPP OUTCOME # IS 0 KEY IS CM08
INCLINATION IS 29.00
CODE IS SPCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 5 FLIGHTS: 6.957
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 14.792

EVA CRANE OP 12.600

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EVA SERVICE TECH 12.600

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.070
TEST & C/O = 0.486
MODULE MATE = 0.152

ADJUSTED DUR FOR 5 FLIGHTS, AT SPACE STATION 10.122
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	4.402
S/C SYS - ELEC	3.349
S/C SYS - MECH	3.349
S/C SYS - FLUIDS	2.551
SP STA SYS OPS	20.244
EVA CRANE OP	10.038
EVA SERVICE TECH	8.568

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 9 IN MANDAYS/YR

STS OPERATIONS	7.0
CONSTRUCTION OPERATIONS	10.1
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 10
NUMBER OF FLIGHTS: 8 PRIME MISSION: LOW INCL STA RESUPPLY OUTCOME # IS 0 KEY IS OT02
INCLINATION IS 29.00
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 8 FLIGHTS: 21.212
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	43.828
EVA CRANE OP	40.320

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EVA SERVICE TECH 40.320

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 10 IN MANDAYS/YR

STS OPERATIONS	21.2
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

PAYLOADS SERVICING ANALYSIS

PAYLOAD WITH KEY S001 EARTH OBSERV PALLET

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 150.000

UPDATED WORK DURATION AT SP STA 150.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.000
EARTH, OCEAN OBS	150.000
S/C SYS - ELEC	7.500
S/C SYS - FLUIDS	7.500
SP STA SYS OPS	7.500

DURATION SUMMARY FOR PAYLOAD NO. 1 S001 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	150.0

PAYLOAD WITH KEY S002 SYNTH APERTURE RADAR

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 5.000

UPDATED WORK DURATION AT SP STA 5.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	0.500
EARTH, OCEAN OBS	5.000
S/C SYS - ELEC	0.250
S/C SYS - FLUIDS	0.250

SP STA SYS OPS 0.250

DURATION SUMMARY FOR PAYLOAD NO. 2 S002 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 5.0

PAYLOAD WITH KEY S003 HETERODYNING CO2 LIDAR

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 5.000

UPDATED WORK DURATION AT SP STA 5.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 0.500

EARTH, OCEAN OBS 5.000

S/C SYS - ELEC 0.250

S/C SYS - FLUIDS 0.250

SP STA SYS OPS 0.250

DURATION SUMMARY FOR PAYLOAD NO. 3 S003 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 5.0

PAYLOAD WITH KEY S004 UPPER ATMOS RESEARCH PKG

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 145.000

UPDATED WORK DURATION AT SP STA 145.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	14.500
EARTH, OCEAN OBS	145.000
S/C SYS - ELEC	7.250
S/C SYS - FLUIDS	7.250
SP STA SYS OPS	7.250

DURATION SUMMARY FOR PAYLOAD NO. 4 S004 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	145.0

PAYLOAD WITH KEY OT03 SPACE STATION MODULES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 5 OT03 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	67.200
SP STA SYS OPS	470.400
EVA CRANE OP	67.200
EVA SERVICE TECH	67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 5 OT03 IN MANDAYS/YR

SERVICING OPERATIONS	336.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY OT04 HI-INCL STATION RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 6 OT04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SP01 SPACE SCIENCE SUBSATELLITE

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
TMS MATE/DEMATE = 0.260

ADJUSTED SERVICING TIME FOR 7 SP01 2.1 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	0.510
S/C SYS - DATA	2.041
S/C SYS - MECH	0.204
S/C SYS - FLUIDS	0.102
SP STA SYS OPS	4.208
EVA CRANE OP	1.807
EVA SERVICE TECH	1.807

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 7 SP01 IN MANDAYS/YR

SERVICING OPERATIONS 2.1
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SA01 VLBI/COSMIC RAY PKG

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

ASTROPHYSICS = 67.000

UPDATED WORK DURATION AT SP STA 67.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	6.700
ASTROPHSICS	67.000
S/C SYS - ELEC	3.350
S/C SYS - FLUIDS	3.350
SP STA SYS OPS	3.350

DURATION SUMMARY FOR PAYLOAD NO. 9 SA01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	67.0

PAYLOAD WITH KEY SL08 RAD BIOLOGY IN SM MAMMALS

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 30.000

UPDATED WORK DURATION AT SP STA 30.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	3.000
MED/BIO RESEARCH	30.000
S/C SYS - ELEC	1.500
S/C SYS - FLUIDS	1.500
SP STA SYS OPS	1.500

DURATION SUMMARY FOR PAYLOAD NO. 10 SL08 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	30.0

PAYLOAD WITH KEY SL01 HUMAN LIFE SI CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 73.000

UPDATED WORK DURATION AT SP STA 73.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	7.300
MED/BIO RESEARCH	73.000
S/C SYS - ELEC	3.650
S/C SYS - FLUIDS	3.650
SP STA SYS OPS	3.650

DURATION SUMMARY FOR PAYLOAD NO. 11 SL01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	73.0

PAYLOAD WITH KEY SL04 LIFESCIENCES RES FAC

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 191.000

UPDATED WORK DURATION AT SP STA 191.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	19.100
MED/BIO RESEARCH	191.000
S/C SYS - ELEC	9.550
S/C SYS - FLUIDS	9.550
SP STA SYS OPS	9.550

DURATION SUMMARY FOR PAYLOAD NO. 14 SL04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 191.0

PAYLOAD WITH KEY SL05 CENTRIFUGE (ADD TO LSRF)

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 91.000

UPDATED WORK DURATION AT SP STA 91.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 9.100

MED/BIO RESEARCH 91.000

S/C SYS - ELEC 4.550

S/C SYS - FLUIDS 4.550

SP STA SYS OPS 4.550

DURATION SUMMARY FOR PAYLOAD NO. 15 SL05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 91.0

PAYLOAD WITH KEY SL06 CLOSED ENV LSS EXPT MOD

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 547.500

UPDATED WORK DURATION AT SP STA 547.5 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 54.750

MED/BIO RESEARCH 547.500

S/C SYS - ELEC 27.375

S/C SYS - FLUIDS 27.375

SP STA SYS OPS 27.375

DURATION SUMMARY FOR PAYLOAD NO. 16 SL06 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 547.5

PAYLOAD WITH KEY CM01 MATLS SCIENCE LAB

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 300.000

UPDATED WORK DURATION AT SP STA 300.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 17 CM01 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 300.0

PAYLOAD WITH KEY CM02 CRYSTAL GROWTH FACTORY/PLAT

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 36.000
TEST & C/O = 1.944
TMS LAUNCH = 0.328
TMS OPS = 12.000
TMS CREW OPS = 12.000
TMS CAPTURE/BRTH = 0.168
TMS MAINT/REFUEL = 4.400
CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 18 CM02 154.7 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 61.471

S/C SYS - DATA 126.739

S/C SYS - ELEC	54.818
S/C SYS - MECH	125.800
S/C SYS - FLUIDS	44.206
SP STA SYS OPS	143.136
EVA SERVICE TECH	56.952
TMS PILOT	254.083

DURATION SUMMARY FOR PAYLOAD NO. 18 CM02 IN MANDAYS/YR

SERVICING OPERATIONS 154.7
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM03 CRYSTAL GROWTH RESUP-1

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	12.000
TEST & C/O	=	1.458
TMS LAUNCH	=	0.246
TMS OPS	=	9.000
TMS CREW OPS	=	9.000
TMS CAPTURE/BRTH	=	0.126
TMS MAINT/REFUEL	=	3.300
CREW MOD MAINT	=	5.130

ADJUSTED SERVICING TIME FOR 19 CM03 84.5 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	30.353
S/C SYS - DATA	79.304
S/C SYS - ELEC	25.364
S/C SYS - MECH	78.600
S/C SYS - FLUIDS	17.404
SP STA SYS OPS	75.852
EVA SERVICE TECH	42.714
TMS PILOT	127.562

DURATION SUMMARY FOR PAYLOAD NO. 19 CM03 IN MANDAYS/YR

SERVICING OPERATIONS 84.5
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM04 CRYSTAL GROWTH RESUP-2

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 16.000
TEST & C/O = 1.944
TMS LAUNCH = 0.328
TMS OPS = 12.000
TMS CREW OPS = 12.000
TMS CAPTURE/BRTH = 0.168
TMS MAINT/REFUEL = 4.400
CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 20 CM04 112.7 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	40.471
S/C SYS - DATA	105.739
S/C SYS - ELEC	33.818
S/C SYS - MECH	104.800
S/C SYS - FLUIDS	23.206
SP STA SYS OPS	101.136
EVA SERVICE TECH	56.952
TMS PILOT	170.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 20 CM04 IN MANDAYS/YR

SERVICING OPERATIONS 112.7
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SA02 ASTRO TELESCOPE CLUSTER

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 65.000

UPDATED WORK DURATION AT SP STA 65.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	6.500
ASTROPHSICS	65.000
S/C SYS - ELEC	3.250
S/C SYS - FLUIDS	3.250
SP STA SYS OPS	3.250

DURATION SUMMARY FOR PAYLOAD NO. 21 SA02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	65.0

PAYLOAD WITH KEY SA04 ASTROPHYSICS OBSERVATORIES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	6.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 23 SA04 38.5 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.278
S/C SYS - DATA	40.774
S/C SYS - ELEC	10.555
S/C SYS - MECH	29.524
S/C SYS - FLUIDS	8.513
SP STA SYS OPS	41.723
EVA SERVICE TECH	14.238
TMS PILOT	50.921

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 23 SA04 IN MANDAYS/YR

SERVICING OPERATIONS 38.5
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC03 INTELSAT-7,7A CLASS COMSAT

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 26 CC03 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC04 MULTIBEAM COMM. SATELLITE

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 27 CC04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC05 RECONFIGURABLE COMM. SATELLITE

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 28 CC05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM05 CONT FLOW ELEC- TROPH PLATFORM

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

ADJUSTED SERVICING TIME FOR 29 CM05 0.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 29 CM05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM06 CONTINUOUS FLOW. ELECTRO RESUPP

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 48.000
TEST & C/O = 1.944
TMS LAUNCH = 0.328
TMS OPS = 12.000
TMS CREW OPS = 12.000
TMS CAPTURE/BRTH = 0.168
TMS MAINT/REFUEL = 4.400
CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 30 CM06 179.9 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 74.071

S/C SYS - DATA 139.339

S/C SYS - ELEC 67.418

S/C SYS - MECH 138.400

S/C SYS - FLUIDS 56.806

SP STA SYS OPS 168.336

EVA SERVICE TECH 56.952

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SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 30 CM06 IN MANDAYS/YR

SERVICING OPERATIONS 179.9
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM07 GLASS PROC PLANT

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 50.000

UPDATED WORK DURATION AT SP STA 50.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 31 CM07 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 50.0

PAYLOAD WITH KEY CM08 GLASSPROC OPTICA LFIBERS RESUPP

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 8.000

UPDATED WORK DURATION AT SP STA 8.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 32 CM08 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 8.0

PAYLOAD WITH KEY OT01 LOW INCL STA MODULE DEL

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 33 OT01 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	67.200
SP STA SYS OPS	470.400
EVA CRANE OP	67.200
EVA SERVICE TECH	67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 33 OT01 IN MANDAYS/YR

SERVICING OPERATIONS	336.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY OT02 LOW INCL STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 34 OT02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY OT05 HI-ALT STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 35 OT05 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY TS02 TECH DEVEL CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 20.000

UPDATED WORK DURATION AT SP STA 20.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	4.000
ENGINEERING	20.000
S/C SYS - DATA	3.000
S/C SYS - ELEC	1.000
S/C SYS - MECH	1.000
S/C SYS - FLUIDS	4.000
SP STA SYS OPS	2.000
EVA CRANE OP	1.000
EVA SERVICE TECH	1.000
MANNED OTV PILOT	3.000

DURATION SUMMARY FOR PAYLOAD NO. 45 TS02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	20.0

SKILL MIX SUMMARIES LOW INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***		***COMMERC MISSIONS***		***TECH DEV MISSIONS**		****OPER SUPPORT*****	
	OPS SERV	MSN OP CONST	OPS SERV	MSN OP CONST	OPS SERV	MSN OP CONST	OPS SERV	MSN OP CONST

NO SPECIAL SKILL	0.0	15.3	96.8	0.0	0.0	206.4	0.0	0.0	0.0	0.0	4.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	902.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	65.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	40.8	0.0	0.0	83.9	451.1	0.0	60.6	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	10.6	48.4	0.0	97.0	181.4	0.0	39.8	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	29.5	0.0	0.0	86.8	447.6	0.0	39.8	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	8.5	48.4	0.0	79.3	141.6	0.0	37.2	0.0	0.0	4.0	0.0	21.1	0.0	0.0	0.0
SP STA SYS OPS	2.5	41.7	48.4	0.0	139.7	488.5	0.0	220.9	0.0	0.0	2.0	0.0	109.9	470.4	0.0	0.0
EVA CRANE OP	2.5	0.0	0.0	0.0	104.7	0.0	0.0	71.4	0.0	0.0	1.0	0.0	65.5	67.2	0.0	0.0
EVA SERVICE TECH	2.5	14.2	0.0	0.0	148.2	213.6	0.0	61.1	0.0	0.0	1.0	0.0	65.5	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	136.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	50.9	0.0	0.0	0.0	856.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
1428.	4393.	40.	934.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	389.6
MED/BIO RESEARCH	902.5
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	0.0
ENGINEERING	20.0
ASTROPHSICS	65.0
S/C SYS - DATA	639.4
S/C SYS - ELEC	378.1
S/C SYS - MECH	604.7
S/C SYS - FLUIDS	340.2
SP STA SYS OPS	1523.9
EVA CRANE OP	312.4
EVA SERVICE TECH	573.4
MANNED OTV PILOT	139.0
TMS PILOT	907.1
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 18.6 PEOPLE

SKILL MIX SUMMARIES HIGH INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN	OP CONST	OPS	SERV	MSN	OP CONST	OPS	SERV	MSN	OP CONST	OPS	SERV	MSN	OP CONST
NO SPECIAL SKILL	0.0	0.5	40.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	305.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	67.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	0.0	20.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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S/C SYS - MECH	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	0.1	20.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SP STA SYS OPS	2.5	4.2	20.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	470.4	0.0	0.0
EVA CRANE OP	2.5	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
EVA SERVICE TECH	2.5	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
521.	0.	0.	703.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	107.9
MED/BIO RESEARCH	30.0
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	305.0
ENGINEERING	0.0
ASTROPHSICS	67.0
S/C SYS - DATA	2.0
S/C SYS - ELEC	20.1
S/C SYS - MECH	0.2
S/C SYS - FLUIDS	20.2
SP STA SYS OPS	508.4
EVA CRANE OP	81.6
EVA SERVICE TECH	81.6
MANNED OTV PILOT	0.0
TMS PILOT	0.0
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 3.4 PEOPLE

LOW INCLINATION

DURATION SUMMARY FOR YEAR 1998 IN MANDAYS/YR

STS OPERATIONS	70.1
CONSTRUCTION	110.4
OTV OPERATIONS	94.5
OTV MISSIONS	67.2
SERVICING OPERATIONS	906.4
SCIENCE & TECH DEMO	1345.5

HIGH INCLINATION

DURATION SUMMARY FOR YEAR 1998 IN MANDAYS/YR

STS OPERATIONS	6.7
CONSTRUCTION	0.0
OTV OPERATIONS	0.0

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OTV MISSIONS	0.0
SERVICING OPERATIONS	338.1
SCIENCE & TECH DEMO	402.0

SUMMARY OF SPACE STATION PAYLOADS THIS YEAR

KEY	TITLE	PLCODE	INCL	PK POWER	DUTY CYCLE
S001	EARTH OBSERV PALLET	SPCL	98.0	3.5	82.2
S002	SYNTH APERTURE RADAR	SPCL	98.0	10.0	2.7
S003	HETERODYNING CO2 LIDAR	SPXX	98.0	1.0	13.7
S004	UPPER ATMOS RESEARCH PKG	SPCL	98.0	2.2	54.8
OT03	SPACE STATION MODULES	SSSS	98.0	15.0	100.0
OT04	HI-INCL STATION RESUPPLY	SORS	98.0	1.0	100.0
SP01	SPACE SCIENCE SUBSATELLITE	FSXX	98.0	0.0	100.0
SA01	VLBI/COSMIC RAY PKG	SPCL	98.0	2.0	100.0
SL08	RAD BIOLOGY IN SM MAMMALS	SSSA	98.0	0.6	100.0
SL01	HUMAN LIFE SI CARRY-ONS	SSSA	29.0	1.7	100.0
SL04	LIFESCIENCES RES FAC	SPXX	29.0	12.2	100.0
SL05	CENTRIFUGE (ADD TO ISRF)	SSCL	29.0	4.0	100.0
SL06	CLOSED ENV LSS EXPT MOD	SPCL	29.0	9.7	100.0
CM01	MATLS SCIENCE LAB	SPXX	29.0	25.0	35.6
CM02	CRYSTAL GROWTH FACTORY/PLAT	PMCL	29.0	0.0	100.0
CM03	CRYSTAL GROWTH RESUP-1	PMXX	29.0	0.0	0.5
CM04	CRYSTAL GROWTH RESUP-2	PMCL	29.0	0.0	0.5
SA02	ASTRO TELESCOPE	SPXX	29.0	4.0	100.0

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	CLUSTER				
SA04	ASTROPHYSICS OBSERVATORIES	FMXM	29.0	1.0	100.0
CC03	INTELSAT-7,7A CLASS COMSAT	FXCL	0.0	0.0	0.0
CC04	MULTIBEAM COMM. SATELLITE	SSCM	0.0	0.0	0.0
CC05	RECONFIGURABLE COMM. SATELLITE	FXCM	0.0	0.0	1.9
CM05	CONT FLOW ELEC-TROPH PLATFORM	PMCL	29.0	0.0	100.0
CM06	CONTINUOUS FLOW ELECTRO RESUPP	PMXL	29.0	2.0	0.0
CM07	GLASS PROC PLANT	SPCL	29.0	10.6	100.0
CM08	GLASSPROC OPTICA LFIBERS RESUPP	SPCL	29.0	0.0	0.0
OT01	LOW INCL STA MODULE DEL	SSSS	29.0	20.0	100.0
OT02	LOW INCL STA RESUPPLY	SORS	29.0	0.0	100.0
OT05	HI-ALT STA RESUPPLY	OMSB	29.0	0.0	100.0
TS02	TECH DEVEL CARRY-ONS	SSSA	29.0	0.5	6.8

LOW INCLINATION

PEAK POWER	AVERAGE POWER
90.7	72.1

HIGH INCLINATION

PEAK POWER	AVERAGE POWER
35.3	23.1.

RESOURCES SUMMARY FOR LOW INCLINATION SPACE STATION

INTERNAL VOLUME	7.4 CUBIC METERS
POWER	72.1 KW
NO. OF PORTS	6.

RESOURCES SUMMARY FOR HIGH INCLINATION SPACE STATION

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INTERNAL VOLUME	6.8 CUBIC METERS
POWER	23.1 KW
NO. OF PORTS	5.

POINTING & DISTURBANCE SUMMARY FOR LOW INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350
SL01	----------														
CM01					----------										
CM02	----------														
CM03								-							
CM04								-							
SA02	**********														
SA04	----------														
CC03								-							
CC04								-							
CC05								-							
CM05	----------														
CM06								-							
CM07	----------														
CM08								-							
OT01	----------														
OT02	----------														
OT05	----------														
TS02								-----							

POINTING & DISTURBANCE SUMMARY FOR HIGH INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

```
                          1   1   1   1   2   2   2   2   3   3   3
        2   5   7         0   2   5   7   0   2   5   7   0   2   5
    0   5   0  .5         0   5   0   5   0   5   0   5   0   5   0
SD01 00000000000000000000000000000000000000000000000000000000000000
SD02 00
SD03 0000000000
SD04 00000000000000000000000000000000000000
OT03 ------------------------------------------------------------------------
OT04 ------------------------------------------------------------------------
SP01 ------------------------------------------------------------------------
SA01 ************************************************************************
SL08 ------------------------------------------------------------------------
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* * * SPACE STATION OPERATIONS ANALYSIS FOR YEAR 1999 * * *

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 1
NUMBER OF FLIGHTS: 1 PRIME MISSION: **CRYSTAL GROWTH FACTORY/PLAT OUTCOME # IS 0 KEY IS CM02
INCLINATION IS 29.00
CODE IS PMCL
SECOND MISSION: TMS CAB DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3792
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS	1.593
SP STA SYS OPS	9.989
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.718
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	0.848
S/C SYS - ELEC	0.590
S/C SYS - MECH	0.590
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	3.436
EVA CRANE OP	1.394
EVA SERVICE TECH	1.394

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 2
NUMBER OF FLIGHTS: 1 PRIME MISSION: **INTELSAT-7,7A CLASS COMSAT OUTCOME # IS 0 KEY IS CC03
INCLINATION IS 0.00
CODE IS FXCL
SECOND MISSION: TMS CAB DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS

ORBITER ARRIVE	=	0.0416	
ORBITER OFFLOAD	=	0.6000	
ORBITER OFFLOAD	=	0.6000	(MISSION 2)
ORBITER RELOAD	=	0.6000	(MISSION 2)
ORBITER DEPART	=	0.0210	
ORBITER PROP XFR	=	0.3954	

ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911

STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - FLUIDS	1.661
SP STA SYS OPS	10.075
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

OTV OPERATIONS

UNADJUSTED DURATIONS

MAINTAIN STAGE	=	1.150
MATE TO PAYLD	=	0.131
STAGE/STAGE MATE	=	0.210
OTV/PLD C/O	=	0.555
LAUNCH	=	0.082
CAPTURE	=	0.042
MISSION OPS	=	2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 8.756AWAY 4.200

FIRST MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - DATA	6.987
S/C SYS - ELEC	9.160
S/C SYS - MECH	7.470

S/C SYS - FLUIDS 7.879

SP STA SYS OPS 16.972

EVA CRANE OP 8.636

EVA SERVICE TECH 15.881

MANNED OTV PILOT 8.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.280
TEST & C/O = 0.486

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 2.146
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 0.816

S/C SYS - ELEC 0.510

S/C SYS - MECH 0.510

S/C SYS - FLUIDS 0.510

SP STA SYS OPS 4.292

EVA CRANE OP 2.251

EVA SERVICE TECH 1.075

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS 3.9
CONSTRUCTION OPERATIONS 2.1
OTV OPERATIONS 8.8
OTV MISSIONS 4.2

TYPE #1 = 2 TYPE #2 = 2

***>> FLIGHT NO. 3
NUMBER OF FLIGHTS: 4 PRIME MISSION: **RECONFIGURABLE COMM. SATELLI OUTCOME # IS 0 KEY IS CC05
INCLINATION IS 0.00
CODE IS FXCM
SECOND MISSION: CRYSTAL GROWTH RESUP-2 OUTCOME # IS 0
KEY IS CM04
CODE IS PMCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416

ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3629
ADJ STS DURATION AT SP STA FOR TOTAL OF 4 FLIGHTS: 10.606

STS OPERATIONS CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - FLUIDS	6.097
SP STA SYS OPS	29.536
EVA CRANE OP	20.160
EVA SERVICE TECH	20.160

OTV OPERATIONS

UNADJUSTED DURATIONS

MAINTAIN STAGE	=	1.150
MATE TO PAYLD	=	0.131
STAGE/STAGE MATE	=	0.210
OTV/PLD C/O	=	0.555
LAUNCH	=	0.082
CAPTURE	=	0.042
MISSION OPS	=	7.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 4 FLIGHTS:
AT SPACE STA 77.025AWAY 58.800

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	69.947
S/C SYS - ELEC	78.641
S/C SYS - MECH	71.879
S/C SYS - FLUIDS	72.970
SP STA SYS OPS	57.127
EVA CRANE OP	24.464
EVA SERVICE TECH	53.444
MANNED OTV PILOT	118.638

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.140
TEST & C/O	=	3.400
MODULE MATE	=	0.152

ADJUSTED DUR FOR 4 FLIGHTS, AT SPACE STATION 39.824

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	23.103
S/C SYS - ELEC	14.918
S/C SYS - MECH	14.918
S/C SYS - FLUIDS	14.280
SP STA SYS OPS	79.649
EVA CRANE OP	22.529
EVA SERVICE TECH	20.177

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 3 IN MANDAYS/YR

STS OPERATIONS	10.6
CONSTRUCTION OPERATIONS	39.8
OTV OPERATIONS	77.0
OTV MISSIONS	58.8

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.200
MATE TO FIXT	=	0.056
TEST & C/O	=	0.486
MODULE MATE	=	0.076

ADJUSTED DUR FOR 4 FLIGHTS, AT SPACE STATION 46.696

SECOND CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	26.497
S/C SYS - ELEC	17.279
S/C SYS - MECH	17.279
S/C SYS - FLUIDS	16.321
SP STA SYS OPS	93.391
EVA CRANE OP	28.106
EVA SERVICE TECH	25.754

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 3 IN MANDAYS/YR

STS OPERATIONS	10.6
CONSTRUCTION OPERATIONS	46.7
OTV OPERATIONS	77.0
OTV MISSIONS	58.8

TYPE #1 = 2 TYPE #2 = 4

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***>> FLIGHT NO.   4
  NUMBER OF FLIGHTS:   1 PRIME MISSION: **CRYSTAL GROWTH    RESUP-2       OUTCOME # IS    0 KEY IS CM04
 INCLINATION IS    29.00
CODE IS PMCL
SECOND MISSION: TMS PROP DELIV                      OUTCOME # IS    0

                              SHUTTLE OPERATIONS

 UNADJUSTED DURATIONS
ORBITER ARRIVE   =  0.0416
ORBITER OFFLOAD  =  0.6000
ORBITER OFFLOAD  =  0.6000  (MISSION 2)
ORBITER RELOAD   =  0.6000  (MISSION 2)
ORBITER DEPART   =  0.0210
ORBITER PROP XFR =  0.3304
ADJ STS DURATION AT SP STA FOR TOTAL OF   1 FLIGHTS:   3.911
STS OPERATIONS   MISSION RESULTS
CREW SKILL        MANDAYS

S/C SYS - FLUIDS     1.388

SP STA SYS OPS       9.733

EVA CRANE OP         7.560

EVA SERVICE TECH     7.560


                           CONSTRUCTION OPERATIONS

 UNADJUSTED DURATIONS
SETUP/TAKEDOWN   =    0.200
MATE TO FIXT     =    0.056
TEST & C/O       =    0.486
MODULE MATE      =    0.076

ADJUSTED DUR FOR   1 FLIGHTS, AT SPACE STATION   1.718
FIRST            MISSION RESULTS
CREW SKILL        MANDAYS

S/C SYS - DATA       0.848

S/C SYS - ELEC       0.590

S/C SYS - MECH       0.590

S/C SYS - FLUIDS     0.510

SP STA SYS OPS       3.436

EVA CRANE OP         1.394

EVA SERVICE TECH     1.394


                ***DURATION SUMMARY FORFIRST          MISSION FLIGHT NO.    4 IN MANDAYS/YR***

    STS OPERATIONS              3.9
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```
     CONSTRUCTION OPERATIONS        1.7
     OTV OPERATIONS                 0.0
     OTV MISSIONS                   0.0

 TYPE #1 =     2 TYPE #2 =     4

 ***>> FLIGHT NO.    5
   NUMBER OF FLIGHTS:    2 PRIME MISSION: CONTINUOUS FLOW   ELECTRO RESUPP  OUTCOME # IS     0 KEY IS CM06
  INCLINATION IS     29.00
 CODE IS PMXL
 SECOND MISSION: TMS PROP DELIV                          OUTCOME # IS     0

                              SHUTTLE OPERATIONS

  UNADJUSTED DURATIONS
 ORBITER ARRIVE    =   0.0832
 ORBITER OFFLOAD   =   0.6000
 ORBITER OFFLOAD   =   0.6000  (MISSION 2)
 ORBITER RELOAD    =   0.6000  (MISSION 2)
 ORBITER DEPART    =   0.0210
 ADJ STS DURATION AT SP STA FOR TOTAL OF    2 FLIGHTS:    7.998
 STS OPERATIONS    MISSION RESULTS
 CREW SKILL         MANDAYS

 SP STA SYS OPS       16.521

 EVA CRANE OP         15.120

 EVA SERVICE TECH     15.120


                         CONSTRUCTION OPERATIONS


                 ***DURATION SUMMARY FORFIRST          MISSION FLIGHT NO.     5 IN MANDAYS/YR***

     STS OPERATIONS                 8.0
     CONSTRUCTION OPERATIONS        0.0
     OTV OPERATIONS                 0.0
     OTV MISSIONS                   0.0

 TYPE #1 =     2 TYPE #2 =     4

 ***>> FLIGHT NO.    6
   NUMBER OF FLIGHTS:    1 PRIME MISSION: CONTINUOUS FLOW   ELECTRO RESUPP  OUTCOME # IS     0 KEY IS CM06
  INCLINATION IS     29.00
 CODE IS PMXL
 SECOND MISSION: TMS DELIVERY                            OUTCOME # IS     0

                              SHUTTLE OPERATIONS

  UNADJUSTED DURATIONS
 ORBITER ARRIVE    =   0.0832
 ORBITER OFFLOAD   =   0.6000
 ORBITER OFFLOAD   =   0.6000  (MISSION 2)
 ORBITER RELOAD    =   0.6000  (MISSION 2)
 ORBITER DEPART    =   0.0210
 ADJ STS DURATION AT SP STA FOR TOTAL OF    1 FLIGHTS:    3.999
 STS OPERATIONS    MISSION RESULTS
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CREW SKILL	MANDAYS
SP STA SYS OPS	8.261
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 6 IN MANDAYS/YR

STS OPERATIONS	4.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 7
NUMBER OF FLIGHTS: 13 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 13 FLIGHTS: 19.225
STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
SP STA SYS OPS	41.867
EVA CRANE OP	32.760
EVA SERVICE TECH	32.760

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 7 IN MANDAYS/YR

STS OPERATIONS	19.2
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 8
NUMBER OF FLIGHTS: 6 PRIME MISSION: GLASSPROC OPTICA LFIBERS RESUPP OUTCOME # IS 0 KEY IS CM08
INCLINATION IS 29.00

CODE IS SPCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 6 FLIGHTS: 8.873
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	19.323
EVA CRANE OP	15.120
EVA SERVICE TECH	15.120

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.070
TEST & C/O = 0.486
MODULE MATE = 0.152

ADJUSTED DUR FOR 6 FLIGHTS, AT SPACE STATION 12.146
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	5.282
S/C SYS - ELEC	4.019
S/C SYS - MECH	4.019
S/C SYS - FLUIDS	3.062
SP STA SYS OPS	24.293
EVA CRANE OP	12.046
EVA SERVICE TECH	10.282

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 8 IN MANDAYS/YR

STS OPERATIONS	8.9
CONSTRUCTION OPERATIONS	12.1
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 9
NUMBER OF FLIGHTS: 8 PRIME MISSION: LOW INCL STA RESUPPLY OUTCOME # IS 0 KEY IS OT02
INCLINATION IS 29.00

CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 8 FLIGHTS: 21.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 45.924

EVA CRANE OP 40.320

EVA SERVICE TECH 40.320

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 9 IN MANDAYS/YR

STS OPERATIONS	21.9
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 10
NUMBER OF FLIGHTS: 2 PRIME MISSION: HI-INCL STATION RESUPPLY OUTCOME # IS 0 KEY IS OT04
INCLINATION IS 98.00
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 5.478
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 11.481

EVA CRANE OP 10.080

EVA SERVICE TECH 10.080

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 10 IN MANDAYS/YR

STS OPERATIONS	5.5
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

PAYLOADS SERVICING ANALYSIS

PAYLOAD WITH KEY S001 EARTH OBSERV PALLET

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 150.000

UPDATED WORK DURATION AT SP STA 150.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	15.000
EARTH, OCEAN OBS	150.000
S/C SYS - ELEC	7.500
S/C SYS - FLUIDS	7.500
SP STA SYS OPS	7.500

DURATION SUMMARY FOR PAYLOAD NO. 1 S001 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	150.0

PAYLOAD WITH KEY S002 SYNTH APERTURE RADAR

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 5.000

UPDATED WORK DURATION AT SP STA 5.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	0.500
EARTH, OCEAN OBS	5.000
S/C SYS - ELEC	0.250
S/C SYS - FLUIDS	0.250

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SP STA SYS OPS 0.250

DURATION SUMMARY FOR PAYLOAD NO. 2 S002 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 5.0

PAYLOAD WITH KEY S003 HETERODYNING CO2 LIDAR

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 5.000

UPDATED WORK DURATION AT SP STA 5.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 0.500

EARTH, OCEAN OBS 5.000

S/C SYS - ELEC 0.250

S/C SYS - FLUIDS 0.250

SP STA SYS OPS 0.250

DURATION SUMMARY FOR PAYLOAD NO. 3 S003 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 5.0

PAYLOAD WITH KEY S004 UPPER ATMOS RESEARCH PKG

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 145.000

UPDATED WORK DURATION AT SP STA 145.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

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OF POOR QUALITY

NO SPECIAL SKILL	14.500
EARTH, OCEAN OBS	145.000
S/C SYS - ELEC	7.250
S/C SYS - FLUIDS	7.250
SP STA SYS OPS	7.250

DURATION SUMMARY FOR PAYLOAD NO. 4 S004 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	145.0

PAYLOAD WITH KEY OT03 SPACE STATION MODULES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 5 OT03 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	67.200
SP STA SYS OPS	470.400
EVA CRANE OP	67.200
EVA SERVICE TECH	67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 5 OT03 IN MANDAYS/YR

SERVICING OPERATIONS	336.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY OT04 HI-INCL STATION RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

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OF POOR QUALITY

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 6 OT04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SA01 VLBI/COSMIC RAY PKG

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 67.000

UPDATED WORK DURATION AT SP STA 67.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 6.700

ASTROPHSICS 67.000

S/C SYS - ELEC 3.350

S/C SYS - FLUIDS 3.350

SP STA SYS OPS 3.350

DURATION SUMMARY FOR PAYLOAD NO. 9 SA01 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 67.0

PAYLOAD WITH KEY SL08 RAD BIOLOGY IN SM MAMMALS

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 30.000

UPDATED WORK DURATION AT SP STA 30.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

ORIGINAL PAGE IS
OF POOR QUALITY

NO SPECIAL SKILL	3.000
MED/BIO RESEARCH	30.000
S/C SYS - ELEC	1.500
S/C SYS - FLUIDS	1.500
SP STA SYS OPS	1.500

DURATION SUMMARY FOR PAYLOAD NO. 10 SL08 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	30.0

PAYLOAD WITH KEY SL01 HUMAN LIFE SI CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 73.000

UPDATED WORK DURATION AT SP STA 73.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	7.300
MED/BIO RESEARCH	73.000
S/C SYS - ELEC	3.650
S/C SYS - FLUIDS	3.650
SP STA SYS OPS	3.650

DURATION SUMMARY FOR PAYLOAD NO. 11 SL01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	73.0

PAYLOAD WITH KEY SL04 LIFESCIENCES RES FAC

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 191.000

UPDATED WORK DURATION AT SP STA 191.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	19.100
MED/BIO RESEARCH	191.000
S/C SYS - ELEC	9.550
S/C SYS - FLUIDS	9.550
SP STA SYS OPS	9.550

DURATION SUMMARY FOR PAYLOAD NO. 14 SL04 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	191.0

PAYLOAD WITH KEY SL05 CENTRIFUGE (ADD TO LSRF)

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 91.000

UPDATED WORK DURATION AT SP STA 91.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	9.100
MED/BIO RESEARCH	91.000
S/C SYS - ELEC	4.550
S/C SYS - FLUIDS	4.550
SP STA SYS OPS	4.550

DURATION SUMMARY FOR PAYLOAD NO. 15 SL05 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	91.0

PAYLOAD WITH KEY SL06 CLOSED ENV LSS EXPT MOD

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 547.500

UPDATED WORK DURATION AT SP STA 547.5 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 54.750

MED/BIO RESEARCH 547.500

S/C SYS - ELEC 27.375

S/C SYS - FLUIDS 27.375

SP STA SYS OPS 27.375

DURATION SUMMARY FOR PAYLOAD NO. 16 SL06 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 547.5

PAYLOAD WITH KEY CM01 MATLS SCIENCE LAB

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 300.000

UPDATED WORK DURATION AT SP STA 300.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 17 CM01 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 300.0

PAYLOAD WITH KEY CM02 CRYSTAL GROWTH FACTORY/PLAT

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	36.000
TEST & C/O	=	1.944
TMS LAUNCH	=	0.328
TMS OPS	=	12.000
TMS CREW OPS	=	12.000
TMS CAPTURE/BRTH	=	0.168
TMS MAINT/REFUEL	=	4.400
CREW MOD MAINT	=	6.840

ADJUSTED SERVICING TIME FOR 18 CM02 154.7 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	61.471
S/C SYS - DATA	126.739
S/C SYS - ELEC	54.818
S/C SYS - MECH	125.800
S/C SYS - FLUIDS	44.206
SP STA SYS OPS	143.136
EVA SERVICE TECH	56.952
TMS PILOT	254.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 18 CM02 IN MANDAYS/YR

SERVICING OPERATIONS	154.7
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM03 CRYSTAL GROWTH RESUP-1

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	12.000
TEST & C/O	=	1.458
TMS LAUNCH	=	0.246
TMS OPS	=	9.000
TMS CREW OPS	=	9.000
TMS CAPTURE/BRTH	=	0.126
TMS MAINT/REFUEL	=	3.300
CREW MOD MAINT	=	5.130

ADJUSTED SERVICING TIME FOR 19 CM03 84.5 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	30.353

S/C SYS - DATA	79.304
S/C SYS - ELEC	25.364
S/C SYS - MECH	78.600
S/C SYS - FLUIDS	17.404
SP STA SYS OPS	75.852
EVA SERVICE TECH	42.714
TMS PILOT	127.562

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 19 CM03 IN MANDAYS/YR

SERVICING OPERATIONS	84.5
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM04 CRYSTAL GROWTH RESUP-2

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	16.000
TEST & C/O	=	1.944
TMS LAUNCH	=	0.328
TMS OPS	=	12.000
TMS CREW OPS	=	12.000
TMS CAPTURE/BRTH	=	0.168
TMS MAINT/REFUEL	=	4.400
CREW MOD MAINT	=	6.840

ADJUSTED SERVICING TIME FOR 20 CM04 112.7 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	40.471
S/C SYS - DATA	105.739
S/C SYS - ELEC	33.818
S/C SYS - MECH	104.800
S/C SYS - FLUIDS	23.206
SP STA SYS OPS	101.136
EVA SERVICE TECH	56.952
TMS PILOT	170.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 20 CM04 IN MANDAYS/YR

SERVICING OPERATIONS 112.7
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SA02 ASTRO TELESCOPE CLUSTER

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 65.000

UPDATED WORK DURATION AT SP STA 65.0 WORK DAYS

RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 6.500

ASTROPHSICS 65.000

S/C SYS - ELEC 3.250

S/C SYS - FLUIDS 3.250

SP STA SYS OPS 3.250

DURATION SUMMARY FOR PAYLOAD NO. 21 SA02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 65.0

PAYLOAD WITH KEY SA04 ASTROPHYSICS OBSERVATORIES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 6.000
TEST & C/O = 3.400
TMS LAUNCH = 0.082
TMS OPS = 3.000
TMS CREW OPS = 3.000
TMS CAPTURE/BRTH = 0.042
TMS MAINT/REFUEL = 1.100
CREW MOD MAINT = 1.710

ADJUSTED SERVICING TIME FOR 23 SA04 38.5 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.278
S/C SYS - DATA	40.774
S/C SYS - ELEC	10.555
S/C SYS - MECH	29.524
S/C SYS - FLUIDS	8.513
SP STA SYS OPS	41.723
EVA SERVICE TECH	14.238
TMS PILOT	50.921

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 23 SA04 IN MANDAYS/YR

SERVICING OPERATIONS 38.5
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC03 INTELSAT-7,7A CLASS COMSAT

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 26 CC03 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC04 MULTIBEAM COMM. SATELLITE

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 27 CC04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC05 RECONFIGURABLE COMM. SATELLITE

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 28 CC05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM05 CONT FLOW ELEC- TROPH PLATFORM

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

ADJUSTED SERVICING TIME FOR 29 CM05 0.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 29 CM05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM06 CONTINUOUS FLOW ELECTRO RESUPP

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 48.000
TEST & C/O = 1.944
TMS LAUNCH = 0.328
TMS OPS = 12.000
TMS CREW OPS = 12.000
TMS CAPTURE/BRTH = 0.168
TMS MAINT/REFUEL = 4.400

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OF POOR QUALITY

CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 30 CM06 179.9 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	74.071
S/C SYS - DATA	139.339
S/C SYS - ELEC	67.418
S/C SYS - MECH	138.400
S/C SYS - FLUIDS	56.806
SP STA SYS OPS	168.336
EVA SERVICE TECH	56.952
TMS PILOT	304.483

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 30 CM06 IN MANDAYS/YR

SERVICING OPERATIONS	179.9
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM07 GLASS PROC PLANT

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 50.000

UPDATED WORK DURATION AT SP STA 50.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 31 CM07 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	50.0

PAYLOAD WITH KEY CM08 GLASSPROC OPTICA LFIBERS RESUPP

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 8.000

UPDATED WORK DURATION AT SP STA 8.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 32 CM08 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 8.0

PAYLOAD WITH KEY OT01 LOW INCL STA MODULE DEL

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 33 OT01 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 67.200

SP STA SYS OPS 470.400

EVA CRANE OP 67.200

EVA SERVICE TECH 67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 33 OT01 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT02 LOW INCL STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 34 OT02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT05 HI-ALT STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 35 OT05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY TS02 TECH DEVEL CARRY-ONS

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 20.000

UPDATED WORK DURATION AT SP STA 20.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	4.000
ENGINEERING	20.000
S/C SYS - DATA	3.000
S/C SYS - ELEC	1.000
S/C SYS - MECH	1.000
S/C SYS - FLUIDS	4.000

SP STA SYS OPS	2.000
EVA CRANE OP	1.000
EVA SERVICE TECH	1.000
MANNED OTV PILOT	3.000

DURATION SUMMARY FOR PAYLOAD NO. 45 TS02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	20.0

SKILL MIX SUMMARIES LOW INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	15.3	96.8	0.0	0.0	206.4	0.0	0.0	0.0	0.0	4.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	902.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	65.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	40.8	0.0	0.0	76.9	451.1	0.0	57.4	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	10.6	48.4	0.0	87.8	181.4	0.0	37.9	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	29.5	0.0	0.0	79.3	447.6	0.0	37.9	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	8.5	48.4	0.0	73.1	141.6	0.0	35.2	0.0	0.0	4.0	0.0	18.5	0.0	0.0	0.0
SP STA SYS OPS	0.0	41.7	48.4	0.0	140.3	488.5	0.0	208.5	0.0	0.0	2.0	0.0	125.0	470.4	0.0	0.0
EVA CRANE OP	0.0	0.0	0.0	0.0	111.2	0.0	0.0	67.7	0.0	0.0	1.0	0.0	75.6	67.2	0.0	0.0
EVA SERVICE TECH	0.0	14.2	0.0	0.0	147.4	213.6	0.0	60.1	0.0	0.0	1.0	0.0	75.6	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	127.3	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	50.9	0.0	0.0	0.0	856.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
1421.	4335.	40.	967.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	389.6
MED/BIO RESEARCH	902.5
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	0.0
ENGINEERING	20.0
ASTROPHSICS	65.0
S/C SYS - DATA	629.2
S/C SYS - ELEC	367.1
S/C SYS - MECH	595.4
S/C SYS - FLUIDS	329.3
SP STA SYS OPS	1524.8
EVA CRANE OP	322.7

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OF POOR QUALITY

EVA SERVICE TECH	579.1
MANNED OTV PILOT	130.3
TMS PILOT	907.1
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 18.5 PEOPLE

SKILL MIX SUMMARIES HIGH INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***					***COMMERC MISSIONS***					***TECH DEV MISSIONS**					****OPER SUPPORT*****				
	OPS	SERV	MSN	OP	CONST	OPS	SERV	MSN	OP	CONST	OPS	SERV	MSN	OP	CONST	OPS	SERV	MSN	OP	CONST
NO SPECIAL SKILL	0.0	0.0	40.2		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	67.2	0.0		0.0
MED/BIO RESEARCH	0.0	0.0	30.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0
PHYS SCI RESEARC	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0
EARTH, OCEAN OBS	0.0	0.0	305.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0
ENGINEERING	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0
ASTROPHSICS	0.0	0.0	67.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0
S/C SYS - DATA	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0
S/C SYS - ELEC	0.0	0.0	20.1		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0
S/C SYS - MECH	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0
S/C SYS - FLUIDS	0.0	0.0	20.1		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0
SP STA SYS OPS	0.0	0.0	20.1		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	11.5	470.4	0.0		0.0
EVA CRANE OP	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	10.1	67.2	0.0		0.0
EVA SERVICE TECH	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	10.1	67.2	0.0		0.0
MANNED OTV PILOT	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0
TMS PILOT	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0
MATLS SCIENCE	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
503.	0.	0.	704.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	107.4
MED/BIO RESEARCH	30.0
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	305.0
ENGINEERING	0.0
ASTROPHSICS	67.0
S/C SYS - DATA	0.0
S/C SYS - ELEC	20.1
S/C SYS - MECH	0.0
S/C SYS - FLUIDS	20.1
SP STA SYS OPS	502.0
EVA CRANE OP	77.3
EVA SERVICE TECH	77.3
MANNED OTV PILOT	0.0
TMS PILOT	0.0
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 3.3 PEOPLE

LOW INCLINATION

ORIGINAL PAGE IS
OF POOR QUALITY

DURATION SUMMARY FOR YEAR 1999 IN MANDAYS/YR

STS OPERATIONS	84.3
CONSTRUCTION	104.2
OTV OPERATIONS	85.8
OTV MISSIONS	63.0
SERVICING OPERATIONS	906.4
SCIENCE & TECH DEMO	1345.5

HIGH INCLINATION

DURATION SUMMARY FOR YEAR 1999 IN MANDAYS/YR

STS OPERATIONS	5.5
CONSTRUCTION	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0
SERVICING OPERATIONS	336.0
SCIENCE & TECH DEMO	402.0

SUMMARY OF SPACE STATION PAYLOADS THIS YEAR

KEY	TITLE	PLCODE	INCL	PK POWER	DUTY CYCLE
S001	EARTH OBSERV PALLET	SPCL	98.0	3.5	82.2
S002	SYNTH APERTURE RADAR	SPCL	98.0	10.0	2.7
S003	HETERODYNING CO2 LIDAR	SPXX	98.0	1.0	13.7
S004	UPPER ATMOS RESEARCH PKG	SPCL	98.0	2.2	54.8
OT03	SPACE STATION MODULES	SSSS	98.0	15.0	100.0
OT04	HI-INCL STATION RESUPPLY	SORS	98.0	1.0	100.0
SA01	VLBI/COSMIC RAY PKG	SPCL	98.0	2.0	100.0
SL08	RAD BIOLOGY IN SM MAMMALS	SSSA	98.0	0.6	100.0
SL01	HUMAN LIFE SI CARRY-ONS	SSSA	29.0	1.7	100.0
SL04	LIFESCIENCES RES FAC	SPXX	29.0	12.2	100.0
SL05	CENTRIFUGE (ADD TO LSRF)	SSCL	29.0	4.0	100.0

SL06	CLOSED ENV LSS EXPT MOD	SPCL	29.0	9.7	100.0
CM01	MATLS SCIENCE LAB	SPXX	29.0	25.0	35.6
CM02	CRYSTAL GROWTH FACTORY/PLAT	PMCL	29.0	0.0	100.0
CM03	CRYSTAL GROWTH RESUP-1	PMXX	29.0	0.0	0.5
CM04	CRYSTAL GROWTH RESUP-2	PMCL	29.0	0.0	0.5
SA02	ASTRO TELESCOPE CLUSTER	SPXX	29.0	4.0	100.0
SA04	ASTROPHYSICS OBSERVATORIES	FMXM	29.0	1.0	100.0
CC03	INTELSAT-7,7A CLASS COMSAT	FXCL	0.0	0.0	0.0
CC04	MULTIBEAM COMM. SATELLITE	SSCM	0.0	0.0	0.0
CC05	RECONFIGURABLE COMM. SATELLITE	FXCM	0.0	0.0	1.9
CM05	CONT FLOW ELEC-TROPH PLATFORM	PMCL	29.0	0.0	100.0
CM06	CONTINUOUS FLOW ELECTRO RESUPP	PMXL	29.0	2.0	0.0
CM07	GLASS PROC PLANT	SPCL	29.0	10.6	100.0
CM08	GLASSPROC OPTICA LFIBERS RESUPP	SPCL	29.0	0.0	0.0
OT01	LOW INCL STA MODULE DEL	SSSS	29.0	20.0	100.0
OT02	LOW INCL STA RESUPPLY	SORS	29.0	0.0	100.0
OT05	HI-ALT STA RESUPPLY	OMSB	29.0	0.0	100.0
TS02	TECH DEVEL CARRY-ONS	SSSA	29.0	0.5	6.8

LOW INCLINATION

PEAK POWER AVERAGE POWER

90.7	72.1

HIGH INCLINATION

PEAK POWER	AVERAGE POWER
35.3	23.1

RESOURCES SUMMARY FOR LOW INCLINATION SPACE STATION

INTERNAL VOLUME	7.4	CUBIC METERS
POWER	72.1	KW
NO. OF PORTS	6.	

RESOURCES SUMMARY FOR HIGH INCLINATION SPACE STATION

INTERNAL VOLUME	6.8	CUBIC METERS
POWER	23.1	KW
NO. OF PORTS	5.	

POINTING & DISTURBANCE SUMMARY FOR LOW INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350
SL01	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM01					----------	----------	----------	----------	----------						
CM02	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM03							-								
CM04							-								
SA02	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********	**********
SA04	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CC03							-								
CC04							-								
CC05							-								
CM05	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM06							-								
CM07	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
CM08							-								
OT01	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
OT02	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
OT05	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
TS02							-----								

POINTING & DISTURBANCE SUMMARY FOR HIGH INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

				1	1	1	1	2	2	2	2	3	3	3
	2	5	7	0	2	5	7	0	2	5	7	0	2	5
0	5	0	5	0	5	0	5	0	5	0	5	0	5	0

S001 0000000000000000000000000000000000000000000000000000000000000000

S002 00.

S003 0000000000

S004 00000000000000000000000000000000000000

OT03 ----------

OT04 ----------

SA01 **********

SL08 ----------

* * * SPACE STATION OPERATIONS ANALYSIS FOR YEAR 2000 * * *

TYPE #1 = 1 TYPE #2 = 4

***>> FLIGHT NO. 1
NUMBER OF FLIGHTS: 1 PRIME MISSION: **LARGE RADIO TELESCOPE OUTCOME # IS 0 KEY IS SA05
INCLINATION IS 29.00
CODE IS FMCH
SECOND MISSION: TMS CAB DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS 1.661

SP STA SYS OPS 10.075

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 6.100
MATE TO FIXT = 0.056
TEST & C/O = 10.100

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 34.138
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 16.968

S/C SYS - ELEC 10.605

S/C SYS - MECH 10.605

S/C SYS - FLUIDS 10.605

SP STA SYS OPS 68.275

EVA CRANE OP 25.855

EVA SERVICE TECH 25.855

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	34.1
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 2
NUMBER OF FLIGHTS: 1 PRIME MISSION: **INTELSAT-7,7A CLASS COMSAT OUTCOME # IS 0 KEY IS CC03
INCLINATION IS 0.00
CODE IS FXCL
SECOND MISSION: TMS CAB DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS

ORBITER ARRIVE	=	0.0416	
ORBITER OFFLOAD	=	0.6000	
ORBITER OFFLOAD	=	0.6000	(MISSION 2)
ORBITER RELOAD	=	0.6000	(MISSION 2)
ORBITER DEPART	=	0.0210	
ORBITER PROP XFR	=	0.3954	

ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911

STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - FLUIDS	1.661
SP STA SYS OPS	10.075
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

OTV OPERATIONS

UNADJUSTED DURATIONS

MAINTAIN STAGE	=	1.150
MATE TO PAYLD	=	0.131
STAGE/STAGE MATE	=	0.210
OTV/PLD C/O	=	0.555
LAUNCH	=	0.082
CAPTURE	=	0.042
MISSION OPS	=	2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 8.756AWAY 4.200

FIRST MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - DATA	6.987
S/C SYS - ELEC	9.160
S/C SYS - MECH	7.470
S/C SYS - FLUIDS	7.879

SP STA SYS OPS	16.972
EVA CRANE OP	8.636
EVA SERVICE TECH	15.881
MANNED OTV PILOT	8.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.280
TEST & C/O = 0.486

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 2.146
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	0.816
S/C SYS - ELEC	0.510
S/C SYS - MECH	0.510
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	4.292
EVA CRANE OP	2.251
EVA SERVICE TECH	1.075

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	2.1
OTV OPERATIONS	8.8
OTV MISSIONS	4.2

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 3
NUMBER OF FLIGHTS: 1 PRIME MISSION: **CONT FLOW ELEC TROPH PLATFOR OUTCOME # IS 0 KEY IS CM05
INCLINATION IS 29.00
CODE IS PMCL
SECOND MISSION: TMS PROP DELIV OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210

ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS 1.661

SP STA SYS OPS 10.075

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.718
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 0.848

S/C SYS - ELEC 0.590

S/C SYS - MECH 0.590

S/C SYS - FLUIDS 0.510

SP STA SYS OPS 3.436

EVA CRANE OP 1.394

EVA SERVICE TECH 1.394

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 3 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 3 TYPE #2 = 2

***>> FLIGHT NO. 4
NUMBER OF FLIGHTS: 1 PRIME MISSION: **PRECISION OPT CONSTR & TEST OUTCOME # IS 0 KEY IS TM02
INCLINATION IS 29.00
CODE IS SPCH
SECOND MISSION: RECONFIGURABLE COMM. SATELLITE OUTCOME # IS 0
KEY IS CC05
CODE IS FXCM

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 2.651
STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - FLUIDS	1.661
SP STA SYS OPS	7.555
EVA CRANE OP	5.040
EVA SERVICE TECH	5.040

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 7.000

ADJ OTV OP DURATION FOR SECOND MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 19.256AWAY 14.700
SECOND MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - DATA	17.487
S/C SYS - ELEC	19.660
S/C SYS - MECH	17.970
S/C SYS - FLUIDS	18.379
SP STA SYS OPS	14.452
EVA CRANE OP	6.116
EVA SERVICE TECH	13.361
MANNED OTV PILOT	29.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 6.100
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.490
TEST & C/O = 10.100
MODULE MATE = 6.232

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 48.254
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	19.585
S/C SYS - ELEC	17.149
S/C SYS - MECH	17.149
S/C SYS - FLUIDS	10.605
SP STA SYS OPS	96.508
EVA CRANE OP	54.088
EVA SERVICE TECH	52.030

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 4 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	48.3
OTV OPERATIONS	19.3
OTV MISSIONS	14.7

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.140
TEST & C/O	=	3.400
MODULE MATE	=	0.152

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 58.210
SECOND MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	25.361
S/C SYS - ELEC	20.878
S/C SYS - MECH	20.878
S/C SYS - FLUIDS	14.175
SP STA SYS OPS	116.420
EVA CRANE OP	59.720
EVA SERVICE TECH	57.074

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 4 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	58.2
OTV OPERATIONS	19.3

OTV MISSIONS 14.7

TYPE #1 = 2 TYPE #2 = 2

***>> FLIGHT NO. 5
NUMBER OF FLIGHTS: 3 PRIME MISSION: **RECONFIGURABLE COMM. SATELLI OUTCOME # IS 0 KEY IS CC05
INCLINATION IS 0.00
CODE IS FXCM
SECOND MISSION: CRYSTAL GROWTH RESUP-2 OUTCOME # IS 0
KEY IS CM04
CODE IS PMCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3629
ADJ STS DURATION AT SP STA FOR TOTAL OF 3 FLIGHTS: 7.954
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS 4.573

SP STA SYS OPS 22.152

EVA CRANE OP 15.120

EVA SERVICE TECH 15.120

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 7.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 3 FLIGHTS:
AT SPACE STA 57.768AWAY 44.100
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 52.460

S/C SYS - ELEC 58.981

S/C SYS - MECH 53.909

S/C SYS - FLUIDS 54.727

SP STA SYS OPS 42.845

EVA CRANE OP 18.348

EVA SERVICE TECH	40.083
MANNED OTV PILOT	88.979

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.140
TEST & C/O	=	3.400
MODULE MATE	=	0.152

ADJUSTED DUR FOR 3 FLIGHTS, AT SPACE STATION 29.868

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	17.328
S/C SYS - ELEC	11.189
S/C SYS - MECH	11.189
S/C SYS - FLUIDS	10.710
SP STA SYS OPS	59.737
EVA CRANE OP	16.897
EVA SERVICE TECH	15.133

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 5 IN MANDAYS/YR

STS OPERATIONS	8.0
CONSTRUCTION OPERATIONS	29.9
OTV OPERATIONS	57.8
OTV MISSIONS	44.1

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.200
MATE TO FIXT	=	0.056
TEST & C/O	=	0.486
MODULE MATE	=	0.076

ADJUSTED DUR FOR 3 FLIGHTS, AT SPACE STATION 35.022

SECOND CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	19.873
S/C SYS - ELEC	12.959
S/C SYS - MECH	12.959
S/C SYS - FLUIDS	12.241
SP STA SYS OPS	70.043

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EVA CRANE OP          21.080

EVA SERVICE TECH      19.316


                  ***DURATION SUMMARY FORSECOND          MISSION FLIGHT NO.     5 IN MANDAYS/YR***

     STS OPERATIONS                 8.0
     CONSTRUCTION OPERATIONS       35.0
     OTV OPERATIONS                57.8
     OTV MISSIONS                  44.1

TYPE #1 =     2 TYPE #2 =     4

***>> FLIGHT NO.    6
  NUMBER OF FLIGHTS:    1 PRIME MISSION: CONTINUOUS FLOW   ELECTRO RESUPP  OUTCOME # IS     0 KEY IS CM06
 INCLINATION IS     29.00
CODE IS PMXL
SECOND MISSION: TMS PROP DELIV                      OUTCOME # IS     0

                              SHUTTLE OPERATIONS

 UNADJUSTED DURATIONS
ORBITER ARRIVE    =  0.0832
ORBITER OFFLOAD   =  0.6000
ORBITER OFFLOAD   =  0.6000  (MISSION 2)
ORBITER RELOAD    =  0.6000  (MISSION 2)
ORBITER DEPART    =  0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF    1 FLIGHTS:    3.999
STS OPERATIONS    MISSION RESULTS
CREW SKILL         MANDAYS

SP STA SYS OPS        8.261

EVA CRANE OP          7.560

EVA SERVICE TECH      7.560


                              CONSTRUCTION OPERATIONS


                  ***DURATION SUMMARY FORFIRST           MISSION FLIGHT NO.     6 IN MANDAYS/YR***

     STS OPERATIONS                 4.0
     CONSTRUCTION OPERATIONS        0.0
     OTV OPERATIONS                 0.0
     OTV MISSIONS                   0.0

TYPE #1 =     2 TYPE #2 =     4

***>> FLIGHT NO.    7
  NUMBER OF FLIGHTS:    1 PRIME MISSION: CONTINUOUS FLOW   ELECTRO RESUPP  OUTCOME # IS     0 KEY IS CM06
 INCLINATION IS     29.00
CODE IS PMXL
SECOND MISSION: TMS DELIVERY                        OUTCOME # IS     0

                              SHUTTLE OPERATIONS
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 UNADJUSTED DURATIONS
ORBITER ARRIVE    =  0.0832
ORBITER OFFLOAD   =  0.6000
ORBITER OFFLOAD   =  0.6000  (MISSION 2)
ORBITER RELOAD    =  0.6000  (MISSION 2)
ORBITER DEPART    =  0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF   1 FLIGHTS:   3.999
STS OPERATIONS   MISSION RESULTS
CREW SKILL        MANDAYS

SP STA SYS OPS       8.261

EVA CRANE OP         7.560

EVA SERVICE TECH     7.560

                          CONSTRUCTION OPERATIONS


                ***DURATION SUMMARY FORFIRST          MISSION FLIGHT NO.    7 IN MANDAYS/YR***

    STS OPERATIONS              4.0
    CONSTRUCTION OPERATIONS     0.0
    OTV OPERATIONS              0.0
    OTV MISSIONS                0.0

TYPE #1 =    2 TYPE #2 =    2

***>> FLIGHT NO.   8
  NUMBER OF FLIGHTS:   1 PRIME MISSION: GLASS PROC PLANT                OUTCOME # IS    0 KEY IS CM07
 INCLINATION IS    29.00
CODE IS SPCL
SECOND MISSION: CRYSTAL GROWTH    RESUP-2         OUTCOME # IS    0
KEY IS CM04
CODE IS FMCL

                           SHUTTLE OPERATIONS

 UNADJUSTED DURATIONS
ORBITER ARRIVE    =  0.0416
ORBITER OFFLOAD   =  0.6000
ORBITER OFFLOAD   =  0.6000  (MISSION 2)
ORBITER DEPART    =  0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF   1 FLIGHTS:   2.651
STS OPERATIONS   MISSION RESULTS
CREW SKILL        MANDAYS

SP STA SYS OPS       5.478

EVA CRANE OP         5.040

EVA SERVICE TECH     5.040

                          CONSTRUCTION OPERATIONS

 UNADJUSTED DURATIONS
SETUP/TAKEDOWN    =    0.200
```

MATE TO FIXT = 0.056
TEST & C/O = 0.486

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.558
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 0.816

S/C SYS - ELEC 0.510

S/C SYS - MECH 0.510

S/C SYS - FLUIDS 0.510

SP STA SYS OPS 3.116

EVA CRANE OP 1.075

EVA SERVICE TECH 1.075

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 8 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	1.6
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 3.276
SECOND MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 1.665

S/C SYS - ELEC 1.100

S/C SYS - MECH 1.100

S/C SYS - FLUIDS 1.021

SP STA SYS OPS 6.552

EVA CRANE OP 2.470

EVA SERVICE TECH 2.470

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 8 IN MANDAYS/YR

STS OPERATIONS	2.7
CONSTRUCTION OPERATIONS	3.3

```
    OTV OPERATIONS                0.0
    OTV MISSIONS                  0.0

TYPE #1 =    4 TYPE #2 =    2

***>> FLIGHT NO.   9
  NUMBER OF FLIGHTS:   1 PRIME MISSION: LOW INCL STA      RESUPPLY        OUTCOME # IS    0 KEY IS OT02
 INCLINATION IS    29.00
CODE IS SORS
SECOND MISSION: CRYSTAL GROWTH    RESUP-2         OUTCOME # IS    0
KEY IS CM04
CODE IS PMCL

                          SHUTTLE OPERATIONS

 UNADJUSTED DURATIONS
ORBITER ARRIVE    =  0.0416
ORBITER OFFLOAD   =  0.6000
ORBITER OFFLOAD   =  0.6000  (MISSION 2)
ORBITER RELOAD    =  0.6000
ORBITER DEPART    =  0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF   1 FLIGHTS:   3.911
STS OPERATIONS   MISSION RESULTS
CREW SKILL        MANDAYS

SP STA SYS OPS       7.998

EVA CRANE OP         7.560

EVA SERVICE TECH     7.560

                          CONSTRUCTION OPERATIONS


                ***DURATION SUMMARY FORFIRST          MISSION FLIGHT NO.    9 IN MANDAYS/YR***

    STS OPERATIONS               3.9
    CONSTRUCTION OPERATIONS      0.0
    OTV OPERATIONS               0.0
    OTV MISSIONS                 0.0

 UNADJUSTED DURATIONS
SETUP/TAKEDOWN    =    0.200
MATE TO FIXT      =    0.056
TEST & C/O        =    0.486
MODULE MATE       =    0.076

ADJUSTED DUR FOR   1 FLIGHTS, AT SPACE STATION   1.718
SECOND           MISSION RESULTS
CREW SKILL        MANDAYS

S/C SYS - DATA       0.848

S/C SYS - ELEC       0.590

S/C SYS - MECH       0.590

S/C SYS - FLUIDS     0.510
```

SP STA SYS OPS 3.436

EVA CRANE OP 1.394

EVA SERVICE TECH 1.394

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 9 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 10
NUMBER OF FLIGHTS: 15 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 15 FLIGHTS: 22.182
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 48.308

EVA CRANE OP 37.800

EVA SERVICE TECH 37.800

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 10 IN MANDAYS/YR

STS OPERATIONS	22.2
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 11
NUMBER OF FLIGHTS: 8 PRIME MISSION: GLASSPROC OPTICA LFIBERS RESUPP OUTCOME # IS 0 KEY IS CM08
INCLINATION IS 29.00
CODE IS SPCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS

ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 8 FLIGHTS: 11.831
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 25.764

EVA CRANE OP 20.160

EVA SERVICE TECH 20.160

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.070
TEST & C/O = 0.486
MODULE MATE = 0.152

ADJUSTED DUR FOR 8 FLIGHTS, AT SPACE STATION 16.195
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 7.043

S/C SYS - ELEC 5.359

S/C SYS - MECH 5.359

S/C SYS - FLUIDS 4.082

SP STA SYS OPS 32.390

EVA CRANE OP 16.061

EVA SERVICE TECH 13.709

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 11 IN MANDAYS/YR

STS OPERATIONS 11.8
CONSTRUCTION OPERATIONS 16.2
OTV OPERATIONS 0.0
OTV MISSIONS 0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 12
NUMBER OF FLIGHTS: 7 PRIME MISSION: LOW INCL STA RESUPPLY OUTCOME # IS 0 KEY IS OT02
INCLINATION IS 29.00
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS

ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 7 FLIGHTS: 19.172
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 40.184

EVA CRANE OP 35.280

EVA SERVICE TECH 35.280

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 12 IN MANDAYS/YR

STS OPERATIONS 19.2
CONSTRUCTION OPERATIONS 0.0
OTV OPERATIONS 0.0
OTV MISSIONS 0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 13
NUMBER OF FLIGHTS: 2 PRIME MISSION: HI-INCL STATION RESUPPLY OUTCOME # IS 0 KEY IS OT04
INCLINATION IS 98.00
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 5.478
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 11.481

EVA CRANE OP 10.080

EVA SERVICE TECH 10.080

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 13 IN MANDAYS/YR

STS OPERATIONS 5.5
CONSTRUCTION OPERATIONS 0.0
OTV OPERATIONS 0.0

OTV MISSIONS 0.0

TYPE #1 = 1 TYPE #2 = 0

***>> FLIGHT NO. 14
NUMBER OF FLIGHTS: 1 PRIME MISSION: SPACE PHYSICS PALLET OUTCOME # IS 0 KEY IS SP02
INCLINATION IS 98.00
CODE IS SPCM

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 1.479
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 3.221

EVA CRANE OP 2.520

EVA SERVICE TECH 2.520

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.993
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 1.400
TEST & C/O = 3.400
MODULE MATE = 0.228

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 12.762
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 5.808

S/C SYS - ELEC 3.809

S/C SYS - MECH 3.809

S/C SYS - FLUIDS 3.570

SP STA SYS OPS 25.523

EVA CRANE OP 11.243

EVA SERVICE TECH 5.363

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 14 IN MANDAYS/YR .

STS OPERATIONS 1.5
CONSTRUCTION OPERATIONS 12.8
OTV OPERATIONS 0.0

OTV MISSIONS

0.0

PAYLOADS SERVICING ANALYSIS

PAYLOAD WITH KEY S001 EARTH OBSERV PALLET

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 150.000

UPDATED WORK DURATION AT SP STA 150.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	15.000
EARTH, OCEAN OBS	150.000
S/C SYS - ELEC	7.500
S/C SYS - FLUIDS	7.500
SP STA SYS OPS	7.500

DURATION SUMMARY FOR PAYLOAD NO. 1 S001 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	150.0

PAYLOAD WITH KEY S002 SYNTH APERTURE RADAR

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 5.000

UPDATED WORK DURATION AT SP STA 5.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	0.500
EARTH, OCEAN OBS	5.000
S/C SYS - ELEC	0.250
S/C SYS - FLUIDS	0.250

SP STA SYS OPS 0.250

DURATION SUMMARY FOR PAYLOAD NO. 2 S002 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 5.0

PAYLOAD WITH KEY S003 HETERODYNING CO2 LIDAR

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 5.000

UPDATED WORK DURATION AT SP STA 5.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 0.500

EARTH, OCEAN OBS 5.000

S/C SYS - ELEC 0.250

S/C SYS - FLUIDS 0.250

SP STA SYS OPS 0.250

DURATION SUMMARY FOR PAYLOAD NO. 3 S003 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 5.0

PAYLOAD WITH KEY S004 UPPER ATMOS RESEARCH PKG

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 145.000

UPDATED WORK DURATION AT SP STA 145.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	14.500
EARTH, OCEAN OBS	145.000
S/C SYS - ELEC	7.250
S/C SYS - FLUIDS	7.250
SP STA SYS OPS	7.250

DURATION SUMMARY FOR PAYLOAD NO. 4 S004 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 145.0

PAYLOAD WITH KEY OT03 SPACE STATION MODULES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 5 OT03 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	67.200
SP STA SYS OPS	470.400
EVA CRANE OP	67.200
EVA SERVICE TECH	67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 5 OT03 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT04 HI-INCL STATION RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 6 OT04 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY SP02 SPACE PHYSICS PALLET

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

PHYSICS SCIENCE = 54.000

UPDATED WORK DURATION AT SP STA 54.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	5.400
PHYS SCI RESEARC	54.000
S/C SYS - ELEC	2.700
S/C SYS - FLUIDS	2.700
SP STA SYS OPS	2.700

DURATION SUMMARY FOR PAYLOAD NO. 8 SP02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	54.0

PAYLOAD WITH KEY SA01 VLBI/COSMIC RAY PKG

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

ASTROPHYSICS = 67.000

UPDATED WORK DURATION AT SP STA 67.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

NO SPECIAL SKILL	6.700
ASTROPHSICS	67.000
S/C SYS - ELEC	3.350
S/C SYS - FLUIDS	3.350
SP STA SYS OPS	3.350

DURATION SUMMARY FOR PAYLOAD NO. 9 SA01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	67.0

PAYLOAD WITH KEY SL04 LIFESCIENCES RES FAC

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 191.000

UPDATED WORK DURATION AT SP STA 191.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	19.100
MED/BIO RESEARCH	191.000
S/C SYS - ELEC	9.550
S/C SYS - FLUIDS	9.550
SP STA SYS OPS	9.550

DURATION SUMMARY FOR PAYLOAD NO. 14 SL04 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	191.0

PAYLOAD WITH KEY SL05 CENTRIFUGE (ADD TO LSRF)

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 91.000

UPDATED WORK DURATION AT SP STA 91.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 9.100

MED/BIO RESEARCH 91.000

S/C SYS - ELEC 4.550

S/C SYS - FLUIDS 4.550

SP STA SYS OPS 4.550

DURATION SUMMARY FOR PAYLOAD NO. 15 SL05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 91.0

PAYLOAD WITH KEY SL06 CLOSED ENV LSS EXPT MOD

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 547.500

UPDATED WORK DURATION AT SP STA 547.5 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 54.750

MED/BIO RESEARCH 547.500

S/C SYS - ELEC 27.375

S/C SYS - FLUIDS 27.375

SP STA SYS OPS 27.375

DURATION SUMMARY FOR PAYLOAD NO. 16 SL06 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 547.5

PAYLOAD WITH KEY CM01 MATLS SCIENCE LAB

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 300.000

UPDATED WORK DURATION AT SP STA 300.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 17 CM01 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 300.0

PAYLOAD WITH KEY CM02 CRYSTAL GROWTH FACTORY/PLAT

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 36.000
TEST & C/O = 1.944
TMS LAUNCH = 0.328
TMS OPS = 12.000
TMS CREW OPS = 12.000
TMS CAPTURE/BRTH = 0.168
TMS MAINT/REFUEL = 4.400
CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 18 CM02 154.7 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 61.471

S/C SYS - DATA 126.739

S/C SYS - ELEC 54.818

S/C SYS - MECH 125.800

S/C SYS - FLUIDS 44.206

SP STA SYS OPS 143.136

EVA SERVICE TECH 56.952

TMS PILOT 254.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

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DURATION SUMMARY FOR PAYLOAD NO. 18 CM02 IN MANDAYS/YR

SERVICING OPERATIONS 154.7
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM03 CRYSTAL GROWTH RESUP-1

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 12.000
TEST & C/O = 1.458
TMS LAUNCH = 0.246
TMS OPS = 9.000
TMS CREW OPS = 9.000
TMS CAPTURE/BRTH = 0.126
TMS MAINT/REFUEL = 3.300
CREW MOD MAINT = 5.130

ADJUSTED SERVICING TIME FOR 19 CM03 84.5 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	30.353
S/C SYS - DATA	79.304
S/C SYS - ELEC	25.364
S/C SYS - MECH	78.600
S/C SYS - FLUIDS	17.404
SP STA SYS OPS	75.852
EVA SERVICE TECH	42.714
TMS PILOT	127.562

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 19 CM03 IN MANDAYS/YR

SERVICING OPERATIONS 84.5
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM04 CRYSTAL GROWTH RESUP-2

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 16.000
TEST & C/O = 1.944

TMS LAUNCH = 0.328
TMS OPS = 12.000
TMS CREW OPS = 12.000
TMS CAPTURE/BRTH = 0.168
TMS MAINT/REFUEL = 4.400
CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 20 CM04 112.7 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	40.471
S/C SYS - DATA	105.739
S/C SYS - ELEC	33.818
S/C SYS - MECH	104.800
S/C SYS - FLUIDS	23.206
SP STA SYS OPS	101.136
EVA SERVICE TECH	56.952
TMS PILOT	170.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 20 CM04 IN MANDAYS/YR

SERVICING OPERATIONS 112.7
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SA02 ASTRO TELESCOPE CLUSTER

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 65.000

UPDATED WORK DURATION AT SP STA 65.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	6.500
ASTROPHSICS	65.000
S/C SYS - ELEC	3.250

S/C SYS - FLUIDS	3.250
SP STA SYS OPS	3.250

DURATION SUMMARY FOR PAYLOAD NO. 21 SA02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	65.0

PAYLOAD WITH KEY SA04 ASTROPHYSICS OBSERVATORIES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	6.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 23 SA04 38.5 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.278
S/C SYS - DATA	40.774
S/C SYS - ELEC	10.555
S/C SYS - MECH	29.524
S/C SYS - FLUIDS	8.513
SP STA SYS OPS	41.723
EVA SERVICE TECH	14.238
TMS PILOT	50.921

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 23 SA04 IN MANDAYS/YR

SERVICING OPERATIONS	38.5
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CC03 INTELSAT-7,7A CLASS COMSAT

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 26 CC03 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC04 MULTIBEAM COMM. SATELLITE

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 27 CC04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC05 RECONFIGURABLE COMM. SATELLITE

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 28 CC05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM05 CONT FLOW ELEC- TROPH PLATFORM

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

ADJUSTED SERVICING TIME FOR 29 CM05 0.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 29 CM05 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM06 CONTINUOUS FLOW ELECTRO RESUPP

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	48.000
TEST & C/O	=	1.944
TMS LAUNCH	=	0.328
TMS OPS	=	12.000
TMS CREW OPS	=	12.000
TMS CAPTURE/BRTH	=	0.168
TMS MAINT/REFUEL	=	4.400
CREW MOD MAINT	=	6.840

ADJUSTED SERVICING TIME FOR 30 CM06 179.9 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	74.071
S/C SYS - DATA	139.339
S/C SYS - ELEC	67.418
S/C SYS - MECH	138.400
S/C SYS - FLUIDS	56.806
SP STA SYS OPS	168.336
EVA SERVICE TECH	56.952
TMS PILOT	304.483

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 30 CM06 IN MANDAYS/YR

SERVICING OPERATIONS	179.9
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM07 GLASS PROC PLANT

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 50.000

UPDATED WORK DURATION AT SP STA 50.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 31 CM07 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 50.0

PAYLOAD WITH KEY CM08 GLASSPROC OPTICA LFIBERS RESUPP

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 8.000

UPDATED WORK DURATION AT SP STA 8.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 32 CM08 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 8.0

PAYLOAD WITH KEY OT01 LOW INCL STA MODULE DEL

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 33 OT01 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 67.200

SP STA SYS OPS 470.400

EVA CRANE OP 67.200

EVA SERVICE TECH 67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 33 OT01 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT02 LOW INCL STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 34 OT02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT05 HI-ALT STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 35 OT05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY TM02 PRECISION OPT CONSTR & TEST

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 50.000

UPDATED WORK DURATION AT SP STA 50.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	10.000
ENGINEERING	50.000
S/C SYS - DATA	7.500
S/C SYS - ELEC	2.500
S/C SYS - MECH	2.500
S/C SYS - FLUIDS	10.000
SP STA SYS OPS	5.000
EVA CRANE OP	2.500
EVA SERVICE TECH	2.500
MANNED OTV PILOT	7.500

DURATION SUMMARY FOR PAYLOAD NO. 42 TM02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	50.0

PAYLOAD WITH KEY TS02 TECH DEVEL CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 20.000

UPDATED WORK DURATION AT SP STA 20.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	4.000

ENGINEERING	20.000
S/C SYS - DATA	3.000
S/C SYS - ELEC	1.000
S/C SYS - MECH	1.000
S/C SYS - FLUIDS	4.000
SP STA SYS OPS	2.000
EVA CRANE OP	1.000
EVA SERVICE TECH	1.000
MANNED OTV PILOT	3.000

DURATION SUMMARY FOR PAYLOAD NO. 45 TS02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	20.0

PAYLOAD WITH KEY SA05 LARGE RADIO TELESCOPE

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	10.000
TEST & C/O	=	10.100
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 46 SA05 61.0 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	26.512
S/C SYS - DATA	73.114
S/C SYS - ELEC	14.755
S/C SYS - MECH	36.538
S/C SYS - FLUIDS	14.120
SP STA SYS OPS	78.263
EVA SERVICE TECH	14.238
TMS PILOT	67.721

DURATION SUMMARY FOR PAYLOAD NO. 46 SA05 IN MANDAYS/YR

SERVICING OPERATIONS	61.0
SCIENCE & TECH DEMO	0.0

SKILL MIX SUMMARIES LOW INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	41.8	89.5	0.0	0.0	206.4	0.0	0.0	0.0	0.0	14.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	829.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	65.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	113.9	0.0	0.0	59.4	451.1	0.0	49.2	0.0	0.0	10.5	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	25.3	44.7	0.0	68.1	181.4	0.0	32.8	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	66.1	0.0	0.0	61.4	447.6	0.0	32.8	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	22.6	44.7	0.0	56.4	141.6	0.0	30.1	0.0	0.0	14.0	0.0	14.1	0.0	0.0	0.0
SP STA SYS OPS	0.0	120.0	44.7	0.0	136.0	488.5	0.0	183.0	0.0	0.0	7.0	0.0	110.4	470.4	0.0	0.0
EVA CRANE OP	0.0	0.0	0.0	0.0	112.7	0.0	0.0	62.6	0.0	0.0	3.5	0.0	65.5	67.2	0.0	0.0
EVA SERVICE TECH	0.0	28.5	0.0	0.0	141.6	213.6	0.0	55.6	0.0	0.0	3.5	0.0	65.5	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	97.6	0.0	0.0	0.0	0.0	0.0	10.5	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	118.6	0.0	0.0	0.0	856.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
1655.	4166.	140.	928.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	418.8
MED/BIO RESEARCH	829.5
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	0.0
ENGINEERING	70.0
ASTROPHSICS	65.0
S/C SYS - DATA	684.2
S/C SYS - ELEC	355.9
S/C SYS - MECH	611.3
S/C SYS - FLUIDS	323.6
SP STA SYS OPS	1559.9
EVA CRANE OP	311.5
EVA SERVICE TECH	575.5
MANNED OTV PILOT	108.1
TMS PILOT	974.9
MATLS SCIENCE	0.0

ORIGINAL PAGE IS
OF POOR QUALITY

TOTAL SPACE STATION CREW: 18.9 PEOPLE

SKILL MIX SUMMARIES HIGH INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	0.0	42.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	54.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	305.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	67.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	0.0	0.0	22.8	17.5	0.0	0.0	5.8	0.0	0.0	0.0	39.2	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	0.0	21.3	14.4	19.7	0.0	0.0	3.7	0.0	0.0	0.0	34.3	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	0.0	0.0	14.4	18.0	0.0	0.0	3.7	0.0	0.0	0.0	34.3	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	0.0	21.3	14.2	16.7	0.0	0.0	3.6	0.0	0.0	0.0	21.2	5.0	0.0	0.0	0.0
SP STA SYS OPS	5.0	0.0	21.3	93.8	11.9	0.0	0.0	19.9	5.0	0.0	0.0	193.0	24.8	470.4	0.0	0.0
EVA CRANE OP	5.0	0.0	0.0	37.1	6.1	0.0	0.0	5.6	5.0	0.0	0.0	103.2	15.1	67.2	0.0	0.0
EVA SERVICE TECH	5.0	0.0	0.0	31.2	13.4	0.0	0.0	5.0	5.0	0.0	0.0	104.1	15.1	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	29.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
776.	180.	549.	732.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	109.8
MED/BIO RESEARCH	0.0
PHYS SCI RESEARC	54.0
EARTH, OCEAN OBS	305.0
ENGINEERING	0.0
ASTROPHSICS	67.0
S/C SYS - DATA	85.2
S/C SYS - ELEC	93.4
S/C SYS - MECH	70.4
S/C SYS - FLUIDS	82.0
SP STA SYS OPS	845.2
EVA CRANE OP	249.4
EVA SERVICE TECH	246.1
MANNED OTV PILOT	29.7
TMS PILOT	0.0
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 6.1 PEOPLE

LOW INCLINATION

DURATION SUMMARY FOR YEAR 2000 IN MANDAYS/YR

ORIGINAL PAGE IS
OF POOR QUALITY

STS OPERATIONS	83.5
CONSTRUCTION	91.5
OTV OPERATIONS	66.5
OTV MISSIONS	48.3
SERVICING OPERATIONS	967.4
SCIENCE & TECH DEMO	1322.5

HIGH INCLINATION

DURATION SUMMARY FOR YEAR 2000 IN MANDAYS/YR

STS OPERATIONS	13.5
CONSTRUCTION	153.4
OTV OPERATIONS	19.3
OTV MISSIONS	14.7
SERVICING OPERATIONS	336.0
SCIENCE & TECH DEMO	426.0

SUMMARY OF SPACE STATION PAYLOADS THIS YEAR

KEY	TITLE	PLCODE	INCL	PK POWER	DUTY CYCLE
S001	EARTH OBSERV PALLET	SPCL	98.0	3.5	82.2
S002	SYNTH APERTURE RADAR	SPCL	98.0	10.0	2.7
S003	HETERODYNING CO2 LIDAR	SPXX	98.0	1.0	13.7
S004	UPPER ATMOS RESEARCH PKG	SPCL	98.0	2.2	54.8
OT03	SPACE STATION MODULES	SSSS	98.0	15.0	100.0
OT04	HI-INCL STATION RESUPPLY	SORS	98.0	1.0	100.0
SP02	SPACE PHYSICS PALLET	SPCM	98.0	10.0	9.9
SA01	VLBI/COSMIC RAY PKG	SPCL	98.0	2.0	100.0
SL04	LIFESCIENCES RES FAC	SPXX	29.0	12.2	100.0
SL05	CENTRIFUGE (ADD TO LSRF)	SSCL	29.0	4.0	100.0
SL06	CLOSED ENV LSS EXPT MOD	SPCL	29.0	9.7	100.0
CM01	MATLS SCIENCE LAB	SPXX	29.0	25.0	35.6

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CM02	CRYSTAL GROWTH FACTORY/PLAT	PMCL	29.0	0.0	100.0
CM03	CRYSTAL GROWTH RESUP-1	PMXX	29.0	0.0	0.5
CM04	CRYSTAL GROWTH RESUP-2	PMCL	29.0	0.0	0.5
SA02	ASTRO TELESCOPE CLUSTER	SPXX	29.0	4.0	100.0
SA04	ASTROPHYSICS OBSERVATORIES	FMXM	29.0	1.0	100.0
CC03	INTELSAT-7,7A CLASS COMSAT	FXCL	0.0	0.0	0.0
CC04	MULTIBEAM COMM. SATELLITE	SSCM	0.0	0.0	0.0
CC05	RECONFIGURABLE COMM. SATELLITE	FXCM	0.0	0.0	1.9
CM05	CONT FLOW ELEC-TROPH PLATFORM	PMCL	29.0	0.0	100.0
CM06	CONTINUOUS FLOW ELECTRO RESUPP	PMXL	29.0	2.0	0.0
CM07	GLASS PROC PLANT	SPCL	29.0	10.6	100.0
CM08	GLASSPROC OPTICA LFIBERS RESUPP	SPCL	29.0	0.0	0.0
OT01	LOW INCL STA MODULE DEL	SSSS	29.0	20.0	100.0
OT02	LOW INCL STA RESUPPLY	SORS	29.0	0.0	100.0
OT05	HI-ALT STA RESUPPLY	OMSB	29.0	0.0	100.0
TM02	PRECISION OPT CONSTR & TEST	SPCH	29.0	4.0	13.7
TS02	TECH DEVEL CARRY-ONS	SSSA	29.0	0.5	6.8
SA05	LARGE RADIO TELESCOPE	FMCH	29.0	0.0	100.0

LOW INCLINATION

PEAK POWER AVERAGE POWER

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OF POOR QUALITY

93.0	71.0

HIGH INCLINATION

PEAK POWER	AVERAGE POWER
44.7	23.5

RESOURCES SUMMARY FOR LOW INCLINATION SPACE STATION

INTERNAL VOLUME	4.0	CUBIC METERS
POWER	71.0	KW
NO. OF PORTS	7.	

RESOURCES SUMMARY FOR HIGH INCLINATION SPACE STATION

INTERNAL VOLUME	8.4	CUBIC METERS
POWER	23.5	KW
NO. OF PORTS	6.	

POINTING & DISTURBANCE SUMMARY FOR LOW INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350
CM01						----------									
CM02	----------														
CM03							-								
CM04							-								
SA02	**********														
SA04	----------														
CC03							-								
CC04							-								
CC05							-								
CM05	----------														
CM06							-								
CM07	----------														
CM08							-								
OT01	----------														
OT02	----------														
OT05	----------														
TM02														**********	
TS02							-----								
SA05	----------														

POINTING & DISTURBANCE SUMMARY FOR HIGH INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

				1	1	1	1	2	2	2	2	3	3	3
	2	5	7	0	2	5	7	0	2	5	7	0	2	5
0	5	0	5	0	5	0	5	0	5	0	5	0	5	0

SO01 0000000000000000000000000000000000000000000000000000000000000000

SO02 00

SO03 0000000000

SO04 00000000000000000000000000000000000000

OT03 ----------

OT04 ----------

SP02 0000000

SA01 **********

* * * SPACE STATION OPERATIONS ANALYSIS FOR YEAR 2001 * * *

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 1
NUMBER OF FLIGHTS: 1 PRIME MISSION: **MULTIBEAM COMM SATELLITE OUTCOME # IS 0 KEY IS CC04
INCLINATION IS 0.00
CODE IS SSCM
SECOND MISSION: TMS PROP DELIV OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS 1.661

SP STA SYS OPS 10.075

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 8.756AWAY 4.200
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 6.987

S/C SYS - ELEC 9.160

S/C SYS - MECH 7.470

S/C SYS - FLUIDS 7.879

SP STA SYS OPS 16.972

EVA CRANE OP 8.636

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OF POOR QUALITY

EVA SERVICE TECH 15.881

MANNED OTV PILOT 8.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.993
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.700
TEST & C/O = 3.400
MODULE MATE = 0.152
FAB STRUCT = 0.246

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 11.650
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 5.776

S/C SYS - ELEC 3.730

S/C SYS - MECH 3.730

S/C SYS - FLUIDS 3.570

SP STA SYS OPS 23.299

EVA CRANE OP 8.502

EVA SERVICE TECH 5.562

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	11.6
OTV OPERATIONS	8.8
OTV MISSIONS	4.2

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 2
NUMBER OF FLIGHTS: 1 PRIME MISSION: **CRYSTAL GROWTH FACTORY/PLAT OUTCOME # IS 0 KEY IS CM02
INCLINATION IS 29.00
CODE IS PMCL
SECOND MISSION: TMS CAB DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3792
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911

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OF POOR QUALITY

STS OPERATIONS CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - FLUIDS	1.593
SP STA SYS OPS	9.989
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.200
MATE TO FIXT	=	0.056
TEST & C/O	=	0.486
MODULE MATE	=	0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.718

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	0.848
S/C SYS - ELEC	0.590
S/C SYS - MECH	0.590
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	3.436
EVA CRANE OP	1.394
EVA SERVICE TECH	1.394

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 3
NUMBER OF FLIGHTS: 1 PRIME MISSION: **INTELSAT-7,7A CLASS COMSAT OUTCOME # IS 0 KEY IS CC03
INCLINATION IS 0.00
CODE IS FXCL
SECOND MISSION: TMS PROP DELIV OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS

ORBITER ARRIVE	=	0.0416
ORBITER OFFLOAD	=	0.6000

ORIGINAL PAGE IS
OF POOR QUALITY

ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS	1.661
SP STA SYS OPS	10.075
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

OTV OPERATIONS

UNADJUSTED DURATIONS

MAINTAIN STAGE	=	1.150
MATE TO PAYLD	=	0.131
STAGE/STAGE MATE	=	0.210
OTV/PLD C/O	=	0.555
LAUNCH	=	0.082
CAPTURE	=	0.042
MISSION OPS	=	2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 8.756AWAY 4.200
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	6.987
S/C SYS - ELEC	9.160
S/C SYS - MECH	7.470
S/C SYS - FLUIDS	7.879
SP STA SYS OPS	16.972
EVA CRANE OP	8.636
EVA SERVICE TECH	15.881
MANNED OTV PILOT	8.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.200
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.280
TEST & C/O	=	0.486

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 2.146
FIRST MISSION RESULTS

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OF POOR QUALITY

CREW SKILL	MANDAYS
S/C SYS - DATA	0.816
S/C SYS - ELEC	0.510
S/C SYS - MECH	0.510
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	4.292
EVA CRANE OP	2.251
EVA SERVICE TECH	1.075

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 3 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	2.1
OTV OPERATIONS	8.8
OTV MISSIONS	4.2

TYPE #1 = 2 TYPE #2 = 2

***>> FLIGHT NO. 4
NUMBER OF FLIGHTS: 4 PRIME MISSION: **RECONFIGURABLE COMM. SATELLI OUTCOME # IS 0 KEY IS CC05
INCLINATION IS 0.00
CODE IS FXCM
SECOND MISSION: CRYSTAL GROWTH RESUP-2 OUTCOME # IS 0
KEY IS CM04
CODE IS PMCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3629
ADJ STS DURATION AT SP STA FOR TOTAL OF 4 FLIGHTS: 10.606
STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - FLUIDS	6.097
SP STA SYS OPS	29.536
EVA CRANE OP	20.160
EVA SERVICE TECH	20.160

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150

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OF POOR QUALITY

MATE TO PAYLD	=	0.131
STAGE/STAGE MATE	=	0.210
OTV/PLD C/O	=	0.555
LAUNCH	=	0.082
CAPTURE	=	0.042
MISSION OPS	=	7.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 4 FLIGHTS:
AT SPACE STA 77.025AWAY 58.800

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	69.947
S/C SYS - ELEC	78.641
S/C SYS - MECH	71.879
S/C SYS - FLUIDS	72.970
SP STA SYS OPS	57.127
EVA CRANE OP	24.464
EVA SERVICE TECH	53.444
MANNED OTV PILOT	118.638

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.140
TEST & C/O	=	3.400
MODULE MATE	=	0.152

ADJUSTED DUR FOR 4 FLIGHTS, AT SPACE STATION 39.824

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	23.103
S/C SYS - ELEC	14.918
S/C SYS - MECH	14.918
S/C SYS - FLUIDS	14.280
SP STA SYS OPS	79.649
EVA CRANE OP	22.529
EVA SERVICE TECH	20.177

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 4 IN MANDAYS/YR

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     STS OPERATIONS                10.6
     CONSTRUCTION OPERATIONS       39.8
     OTV OPERATIONS                77.0
     OTV MISSIONS                  58.8

  UNADJUSTED DURATIONS
 SETUP/TAKEDOWN    =     0.200
 MATE TO FIXT      =     0.056
 TEST & C/O        =     0.486
 MODULE MATE       =     0.076

 ADJUSTED DUR FOR   4 FLIGHTS, AT SPACE STATION  46.696
 SECOND           MISSION RESULTS
 CREW SKILL        MANDAYS

 S/C SYS - DATA      26.497

 S/C SYS - ELEC      17.279

 S/C SYS - MECH      17.279

 S/C SYS - FLUIDS    16.321

 SP STA SYS OPS      93.391

 EVA CRANE OP        28.106

 EVA SERVICE TECH    25.754


                ***DURATION SUMMARY FORSECOND          MISSION FLIGHT NO.     4 IN MANDAYS/YR***

     STS OPERATIONS                10.6
     CONSTRUCTION OPERATIONS       46.7
     OTV OPERATIONS                77.0
     OTV MISSIONS                  58.8

 TYPE #1 =     1 TYPE #2 =     4

 ***>> FLIGHT NO.    5
   NUMBER OF FLIGHTS:    1 PRIME MISSION: ASTROPHYSICS      FREE-FLYER      OUTCOME # IS     0 KEY IS SA03
  INCLINATION IS     29.00
 CODE IS FMXM
 SECOND MISSION: TMS PROP DELIV                    OUTCOME # IS     0

                          SHUTTLE OPERATIONS

  UNADJUSTED DURATIONS
 ORBITER ARRIVE    =  0.0416
 ORBITER OFFLOAD   =  0.6000
 ORBITER OFFLOAD   =  0.6000  (MISSION 2)
 ORBITER RELOAD    =  0.6000  (MISSION 2)
 ORBITER DEPART    =  0.0210
 ADJ STS DURATION AT SP STA FOR TOTAL OF   1 FLIGHTS:    3.911
 STS OPERATIONS   MISSION RESULTS
 CREW SKILL        MANDAYS

 SP STA SYS OPS      7.998
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EVA CRANE OP          7.560

EVA SERVICE TECH      7.560

                              CONSTRUCTION OPERATIONS


                    ***DURATION SUMMARY FORFIRST          MISSION FLIGHT NO.     5 IN MANDAYS/YR***

     STS OPERATIONS                  3.9
     CONSTRUCTION OPERATIONS         0.0
     OTV OPERATIONS                  0.0
     OTV MISSIONS                    0.0

TYPE #1 =     2 TYPE #2 =     4

***>> FLIGHT NO.    6
  NUMBER OF FLIGHTS:    1 PRIME MISSION: CONTINUOUS FLOW    ELECTRO RESUPP  OUTCOME # IS     0 KEY IS CM06
 INCLINATION IS     29.00
CODE IS PMXL
SECOND MISSION: TMS DELIVERY                          OUTCOME # IS     0
                              SHUTTLE OPERATIONS

 UNADJUSTED DURATIONS
ORBITER ARRIVE    =  0.0832
ORBITER OFFLOAD   =  0.6000
ORBITER OFFLOAD   =  0.6000  (MISSION 2)
ORBITER RELOAD    =  0.6000  (MISSION 2)
ORBITER DEPART    =  0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF    1 FLIGHTS:    3.999
STS OPERATIONS    MISSION RESULTS
CREW SKILL         MANDAYS

SP STA SYS OPS        8.261

EVA CRANE OP          7.560

EVA SERVICE TECH      7.560

                              CONSTRUCTION OPERATIONS


                    ***DURATION SUMMARY FORFIRST          MISSION FLIGHT NO.     6 IN MANDAYS/YR***

     STS OPERATIONS                  4.0
     CONSTRUCTION OPERATIONS         0.0
     OTV OPERATIONS                  0.0
     OTV MISSIONS                    0.0

TYPE #1 =     4 TYPE #2 =     2

***>> FLIGHT NO.    7
  NUMBER OF FLIGHTS:    2 PRIME MISSION: LOW INCL STA       RESUPPLY        OUTCOME # IS     0 KEY IS OT02
 INCLINATION IS     29.00
CODE IS SORS
```

SECOND MISSION: CRYSTAL GROWTH RESUP-2 OUTCOME # IS 0
KEY IS CM04
CODE IS PMCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 7.823
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	15.997
EVA CRANE OP	15.120
EVA SERVICE TECH	15.120

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 7 IN MANDAYS/YR

STS OPERATIONS	7.8
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 2 FLIGHTS, AT SPACE STATION 3.436
SECOND MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	1.697
S/C SYS - ELEC	1.180
S/C SYS - MECH	1.180
S/C SYS - FLUIDS	1.021
SP STA SYS OPS	6.871
EVA CRANE OP	2.789
EVA SERVICE TECH	2.789

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 7 IN MANDAYS/YR

STS OPERATIONS	7.8
CONSTRUCTION OPERATIONS	3.4
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 8
NUMBER OF FLIGHTS: 19 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 19 FLIGHTS: 28.098
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	61.191
EVA CRANE OP	47.880
EVA SERVICE TECH	47.880

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 8 IN MANDAYS/YR

STS OPERATIONS	28.1
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 9
NUMBER OF FLIGHTS: 10 PRIME MISSION: GLASSPROC OPTICA LFIBERS RESUPP OUTCOME # IS 0 KEY IS CM08
INCLINATION IS 29.00
CODE IS SPCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 10 FLIGHTS: 14.788
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	32.206

EVA CRANE OP 25.200

EVA SERVICE TECH 25.200

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.070
TEST & C/O = 0.486
MODULE MATE = 0.152

ADJUSTED DUR FOR 10 FLIGHTS, AT SPACE STATION 20.244
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 8.803

S/C SYS - ELEC 6.699

S/C SYS - MECH 6.699

S/C SYS - FLUIDS 5.103

SP STA SYS OPS 40.488

EVA CRANE OP 20.076

EVA SERVICE TECH 17.136

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 9 IN MANDAYS/YR

STS OPERATIONS	14.8
CONSTRUCTION OPERATIONS	20.2
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 10
NUMBER OF FLIGHTS: 6 PRIME MISSION: LOW INCL STA RESUPPLY OUTCOME # IS 0 KEY IS OT02
INCLINATION IS 29.00
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 6 FLIGHTS: 16.433
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 34.443

EVA CRANE OP 30.240

EVA SERVICE TECH 30.240

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 10 IN MANDAYS/YR

STS OPERATIONS	16.4
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 11
NUMBER OF FLIGHTS: 2 PRIME MISSION: HI-INCL STATION RESUPPLY OUTCOME # IS 0 KEY IS OT04
INCLINATION IS 98.00
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 5.478
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 11.481

EVA CRANE OP 10.080

EVA SERVICE TECH 10.080

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 11 IN MANDAYS/YR

STS OPERATIONS	5.5
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

PAYLOADS SERVICING ANALYSIS

PAYLOAD WITH KEY S001 EARTH OBSERV PALLET

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 150.000

UPDATED WORK DURATION AT SP STA 150.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.000
EARTH, OCEAN OBS	150.000
S/C SYS - ELEC	7.500
S/C SYS - FLUIDS	7.500
SP STA SYS OPS	7.500

DURATION SUMMARY FOR PAYLOAD NO. 1 S001 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	150.0

PAYLOAD WITH KEY S002 SYNTH APERTURE RADAR

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 5.000

UPDATED WORK DURATION AT SP STA 5.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	0.500
EARTH, OCEAN OBS	5.000
S/C SYS - ELEC	0.250
S/C SYS - FLUIDS	0.250

SP STA SYS OPS 0.250

DURATION SUMMARY FOR PAYLOAD NO. 2 S002 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 5.0

PAYLOAD WITH KEY S003 HETERODYNING CO2 LIDAR

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 5.000

UPDATED WORK DURATION AT SP STA 5.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 0.500

EARTH, OCEAN OBS 5.000

S/C SYS - ELEC 0.250

S/C SYS - FLUIDS 0.250

SP STA SYS OPS 0.250

DURATION SUMMARY FOR PAYLOAD NO. 3 S003 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 5.0

PAYLOAD WITH KEY S004 UPPER ATMOS RESEARCH PKG

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 145.000

UPDATED WORK DURATION AT SP STA 145.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	14.500
EARTH, OCEAN OBS	145.000
S/C SYS - ELEC	7.250
S/C SYS - FLUIDS	7.250
SP STA SYS OPS	7.250

DURATION SUMMARY FOR PAYLOAD NO. 4 S004 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	145.0

PAYLOAD WITH KEY OT03 SPACE STATION MODULES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 5 OT03 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	67.200
SP STA SYS OPS	470.400
EVA CRANE OP	67.200
EVA SERVICE TECH	67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 5 OT03 IN MANDAYS/YR

SERVICING OPERATIONS	336.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY OT04 HI-INCL STATION RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 6 OT04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SP02 SPACE PHYSICS PALLET

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
PHYSICS SCIENCE = 54.000

UPDATED WORK DURATION AT SP STA 54.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 5.400

PHYS SCI RESEARC 54.000

S/C SYS - ELEC 2.700

S/C SYS - FLUIDS 2.700

SP STA SYS OPS 2.700

DURATION SUMMARY FOR PAYLOAD NO. 8 SP02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 54.0

PAYLOAD WITH KEY SA01 VLBI/COSMIC RAY PKG

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 67.000

UPDATED WORK DURATION AT SP STA 67.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	6.700
ASTROPHSICS	67.000
S/C SYS - ELEC	3.350
S/C SYS - FLUIDS	3.350
SP STA SYS OPS	3.350

DURATION SUMMARY FOR PAYLOAD NO. 9 SA01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	67.0

PAYLOAD WITH KEY SL04 LIFESCIENCES RES FAC

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 191.000

UPDATED WORK DURATION AT SP STA 191.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	19.100
MED/BIO RESEARCH	191.000
S/C SYS - ELEC	9.550
S/C SYS - FLUIDS	9.550
SP STA SYS OPS	9.550

DURATION SUMMARY FOR PAYLOAD NO. 14 SL04 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	191.0

PAYLOAD WITH KEY SL05 CENTRIFUGE (ADD TO LSRF)

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 91.000

UPDATED WORK DURATION AT SP STA 91.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	9.100
MED/BIO RESEARCH	91.000
S/C SYS - ELEC	4.550
S/C SYS - FLUIDS	4.550
SP STA SYS OPS	4.550

DURATION SUMMARY FOR PAYLOAD NO. 15 SL05 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	91.0

PAYLOAD WITH KEY SL06 CLOSED ENV LSS EXPT MOD

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 547.500

UPDATED WORK DURATION AT SP STA 547.5 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	54.750
MED/BIO RESEARCH	547.500
S/C SYS - ELEC	27.375
S/C SYS - FLUIDS	27.375
SP STA SYS OPS	27.375

DURATION SUMMARY FOR PAYLOAD NO. 16 SL06 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	547.5

PAYLOAD WITH KEY CM01 MATLS SCIENCE LAB

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 300.000

UPDATED WORK DURATION AT SP STA 300.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 17 CM01 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 300.0

PAYLOAD WITH KEY CM02 CRYSTAL GROWTH FACTORY/PLAT

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 36.000
TEST & C/O = 1.944
TMS LAUNCH = 0.328
TMS OPS = 12.000
TMS CREW OPS = 12.000
TMS CAPTURE/BRTH = 0.168
TMS MAINT/REFUEL = 4.400
CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 18 CM02 154.7 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 61.471

S/C SYS - DATA 126.739

S/C SYS - ELEC 54.818

S/C SYS - MECH 125.800

S/C SYS - FLUIDS 44.206

SP STA SYS OPS 143.136

EVA SERVICE TECH 56.952

TMS PILOT 254.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 18 CM02 IN MANDAYS/YR

SERVICING OPERATIONS	154.7
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM03 CRYSTAL GROWTH RESUP-1

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	12.000
TEST & C/O	=	1.458
TMS LAUNCH	=	0.246
TMS OPS	=	9.000
TMS CREW OPS	=	9.000
TMS CAPTURE/BRTH	=	0.126
TMS MAINT/REFUEL	=	3.300
CREW MOD MAINT	=	5.130

ADJUSTED SERVICING TIME FOR 19 CM03 84.5 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	30.353
S/C SYS - DATA	79.304
S/C SYS - ELEC	25.364
S/C SYS - MECH	78.600
S/C SYS - FLUIDS	17.404
SP STA SYS OPS	75.852
EVA SERVICE TECH	42.714
TMS PILOT	127.562

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 19 CM03 IN MANDAYS/YR

SERVICING OPERATIONS	84.5
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM04 CRYSTAL GROWTH RESUP-2

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	16.000
TEST & C/O	=	1.944

TMS LAUNCH = 0.328
TMS OPS = 12.000
TMS CREW OPS = 12.000
TMS CAPTURE/BRTH = 0.168
TMS MAINT/REFUEL = 4.400
CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 20 CM04 112.7 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	40.471
S/C SYS - DATA	105.739
S/C SYS - ELEC	33.818
S/C SYS - MECH	104.800
S/C SYS - FLUIDS	23.206
SP STA SYS OPS	101.136
EVA SERVICE TECH	56.952
TMS PILOT	170.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 20 CM04 IN MANDAYS/YR

SERVICING OPERATIONS 112.7
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SA02 ASTRO TELESCOPE CLUSTER

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 65.000

UPDATED WORK DURATION AT SP STA 65.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	6.500
ASTROPHSICS	65.000
S/C SYS - ELEC	3.250

S/C SYS - FLUIDS	3.250
SP STA SYS OPS	3.250

DURATION SUMMARY FOR PAYLOAD NO. 21 SA02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	65.0

PAYLOAD WITH KEY SA03 ASTROPHYSICS FREE-FLYER

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	2.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 22 SA03 30.1 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	11.078
S/C SYS - DATA	36.574
S/C SYS - ELEC	6.355
S/C SYS - MECH	25.324
S/C SYS - FLUIDS	4.313
SP STA SYS OPS	33.323
EVA SERVICE TECH	14.238
TMS PILOT	34.121

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 22 SA03 IN MANDAYS/YR

SERVICING OPERATIONS	30.1
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY SA04 ASTROPHYSICS OBSERVATORIES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	6.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 23 SA04 38.5 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.278
S/C SYS - DATA	40.774
S/C SYS - ELEC	10.555
S/C SYS - MECH	29.524
S/C SYS - FLUIDS	8.513
SP STA SYS OPS	41.723
EVA SERVICE TECH	14.238
TMS PILOT	50.921

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 23 SA04 IN MANDAYS/YR

SERVICING OPERATIONS	38.5
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CC03 INTELSAT-7,7A CLASS COMSAT

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 26 CC03 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CC04 MULTIBEAM COMM. SATELLITE

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 27 CC04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC05 RECONFIGURABLE COMM. SATELLITE

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICAYIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 28 CC05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM05 CONT FLOW ELEC- TROPH PLATFORM

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

ADJUSTED SERVICING TIME FOR 29 CM05 0.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 29 CM05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM06 CONTINUOUS FLOW ELECTRO RESUPP

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 48.000
TEST & C/O = 1.944
TMS LAUNCH = 0.328
TMS OPS = 12.000
TMS CREW OPS = 12.000
TMS CAPTURE/BRTH = 0.168
TMS MAINT/REFUEL = 4.400
CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 30 CM06 179.9 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	74.071
S/C SYS - DATA	139.339
S/C SYS - ELEC	67.418
S/C SYS - MECH	138.400
S/C SYS - FLUIDS	56.806
SP STA SYS OPS	168.336
EVA SERVICE TECH	56.952
TMS PILOT	304.483

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 30 CM06 IN MANDAYS/YR

SERVICING OPERATIONS 179.9
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM07 GLASS PROC PLANT

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 50.000

UPDATED WORK DURATION AT SP STA 50.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 31 CM07 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 50.0

PAYLOAD WITH KEY CM08 GLASSPROC OPTICA LFIBERS RESUPP

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 8.000

UPDATED WORK DURATION AT SP STA 8.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 32 CM08 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 8.0

PAYLOAD WITH KEY OT01 LOW INCL STA MODULE DEL

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 33 OT01 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 67.200

SP STA SYS OPS 470.400

EVA CRANE OP 67.200

EVA SERVICE TECH 67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 33 OT01 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT02 LOW INCL STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 34 OT02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT05 HI-ALT STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 35 OT05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY TS02 TECH DEVEL CARRY-ONS

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 20.000

UPDATED WORK DURATION AT SP STA 20.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 4.000

ENGINEERING	20.000
S/C SYS - DATA	3.000
S/C SYS - ELEC	1.000
S/C SYS - MECH	1.000
S/C SYS - FLUIDS	4.000
SP STA SYS OPS	2.000
EVA CRANE OP	1.000
EVA SERVICE TECH	1.000
MANNED OTV PILOT	3.000

DURATION SUMMARY FOR PAYLOAD NO. 45 TS02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	20.0

PAYLOAD WITH KEY SA05 LARGE RADIO TELESCOPE

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	10.000
TEST & C/O	=	10.100
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 46 SA05 61.0 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	26.512
S/C SYS - DATA	73.114
S/C SYS - ELEC	14.755
S/C SYS - MECH	36.538
S/C SYS - FLUIDS	14.120
SP STA SYS OPS	78.263
EVA SERVICE TECH	14.238
TMS PILOT	67.721

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 46 SA05 IN MANDAYS/YR

SERVICING OPERATIONS	61.0
SCIENCE & TECH DEMO	0.0

SKILL MIX SUMMARIES LOW INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	52.9	89.5	0.0	0.0	206.4	0.0	0.0	0.0	0.0	4.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	829.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	65.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	150.5	0.0	0.0	83.9	451.1	0.0	67.5	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	31.7	44.7	0.0	97.0	181.4	0.0	44.9	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	91.4	0.0	0.0	86.8	447.6	0.0	44.9	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	26.9	44.7	0.0	79.3	141.6	0.0	41.3	0.0	0.0	4.0	0.0	20.4	0.0	0.0	0.0
SP STA SYS OPS	2.5	153.3	44.7	0.0	174.9	488.5	0.0	251.4	0.0	0.0	2.0	0.0	133.4	470.4	0.0	0.0
EVA CRANE OP	2.5	0.0	0.0	0.0	140.0	0.0	0.0	85.6	0.0	0.0	1.0	0.0	75.6	67.2	0.0	0.0
EVA SERVICE TECH	2.5	42.7	0.0	0.0	183.5	213.6	0.0	73.9	0.0	0.0	1.0	0.0	75.6	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	136.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	152.8	0.0	0.0	0.0	856.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
1828.	4577.	40.	977.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	419.9
MED/BIO RESEARCH	829.5
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	0.0
ENGINEERING	20.0
ASTROPHSICS	65.0
S/C SYS - DATA	756.0
S/C SYS - ELEC	400.7
S/C SYS - MECH	671.7
S/C SYS - FLUIDS	358.3
SP STA SYS OPS	1721.2
EVA CRANE OP	372.0
EVA SERVICE TECH	660.0
MANNED OTV PILOT	139.0
TMS PILOT	1009.0
MATLS SCIENCE	0.0

ORIGINAL PAGE IS
OF POOR QUALITY

TOTAL SPACE STATION CREW: 20.3 PEOPLE

SKILL MIX SUMMARIES HIGH INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	0.0	42.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	54.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	305.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	67.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	0.0	21.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	0.0	21.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SP STA SYS OPS	0.0	0.0	21.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EVA CRANE OP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.5	470.4	0.0	0.0
EVA SERVICE TECH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
TMS PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
533.	0.	0.	704.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	109.8
MED/BIO RESEARCH	0.0
PHYS SCI RESEARC	54.0
EARTH, OCEAN OBS	305.0
ENGINEERING	0.0
ASTROPHSICS	67.0
S/C SYS - DATA	0.0
S/C SYS - ELEC	21.3
S/C SYS - MECH	0.0
S/C SYS - FLUIDS	21.3
SP STA SYS OPS	503.2
EVA CRANE OP	77.3
EVA SERVICE TECH	77.3
MANNED OTV PILOT	0.0
TMS PILOT	0.0
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 3.4 PEOPLE

LOW INCLINATION

DURATION SUMMARY FOR YEAR 2001 IN MANDAYS/YR

ORIGINAL PAGE IS
OF POOR QUALITY

STS OPERATIONS	97.4
CONSTRUCTION	125.7
OTV OPERATIONS	94.5
OTV MISSIONS	67.2
SERVICING OPERATIONS	997.5
SCIENCE & TECH DEMO	1272.5

HIGH INCLINATION

DURATION SUMMARY FOR YEAR 2001 IN MANDAYS/YR

STS OPERATIONS	5.5
CONSTRUCTION	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0
SERVICING OPERATIONS	336.0
SCIENCE & TECH DEMO	426.0

SUMMARY OF SPACE STATION PAYLOADS THIS YEAR

KEY	TITLE	PLCODE	INCL	PK POWER	DUTY CYCLE
S001	EARTH OBSERV PALLET	SPCL	98.0	3.5	82.2
S002	SYNTH APERTURE RADAR	SPCL	98.0	10.0	2.7
S003	HETERODYNING CO2 LIDAR	SPXX	98.0	1.0	13.7
S004	UPPER ATMOS RESEARCH PKG	SPCL	98.0	2.2	54.8
OT03	SPACE STATION MODULES	SSSS	98.0	15.0	100.0
OT04	HI-INCL STATION RESUPPLY	SORS	98.0	1.0	100.0
SP02	SPACE PHYSICS PALLET	SPCM	98.0	10.0	9.9
SA01	VLBI/COSMIC RAY PKG	SPCL	98.0	2.0	100.0
SL04	LIFESCIENCES RES FAC	SPXX	29.0	12.2	100.0
SL05	CENTRIFUGE (ADD TO LSRF)	SSCL	29.0	4.0	100.0
SL06	CLOSED ENV LSS EXPT MOD	SPCL	29.0	9.7	100.0
CM01	MATLS SCIENCE LAB	SPXX	29.0	25.0	35.6

CM02	CRYSTAL GROWTH FACTORY/PLAT	PMCL	29.0	0.0	100.0
CM03	CRYSTAL GROWTH RESUP-1	PMXX	29.0	0.0	0.5
CM04	CRYSTAL GROWTH RESUP-2	PMCL	29.0	0.0	0.5
SA02	ASTRO TELESCOPE CLUSTER	SPXX	29.0	4.0	100.0
SA03	ASTROPHYSICS FREE-FLYER	FMXM	29.0	0.0	100.0
SA04	ASTROPHYSICS OBSERVATORIES	FMXM	29.0	1.0	100.0
CC03	INTELSAT-7,7A CLASS COMSAT	FXCL	0.0	0.0	0.0
CC04	MULTIBEAM COMM. SATELLITE	SSCM	0.0	0.0	0.0
CC05	RECONFIGURABLE COMM. SATELLITE	FXCM	0.0	0.0	1.9
CM05	CONT FLOW ELEC-TROPH PLATFORM	PMCL	29.0	0.0	100.0
CM06	CONTINUOUS FLOW ELECTRO RESUPP	PMXL	29.0	2.0	0.0
CM07	GLASS PROC PLANT	SPCL	29.0	10.6	100.0
CM08	GLASSPROC OPTICA LFIBERS RESUPP	SPCL	29.0	0.0	0.0
OT01	LOW INCL STA MODULE DEL	SSSS	29.0	20.0	100.0
OT02	LOW INCL STA RESUPPLY	SORS	29.0	0.0	100.0
OT05	HI-ALT STA RESUPPLY	OMSB	29.0	0.0	100.0
TS02	TECH DEVEL CARRY-ONS	SSSA	29.0	0.5	6.8
SA05	LARGE RADIO TELESCOPE	FMCH	29.0	0.0	100.0

LOW INCLINATION

PEAK POWER AVERAGE POWER

ORIGINAL PAGE IS
OF POOR QUALITY

89.0	70.4

HIGH INCLINATION

PEAK POWER	AVERAGE POWER
44.7	23.5

RESOURCES SUMMARY FOR LOW INCLINATION SPACE STATION

INTERNAL VOLUME	4.0	CUBIC METERS
POWER	70.4	KW
NO. OF PORTS	6.	

RESOURCES SUMMARY FOR HIGH INCLINATION SPACE STATION

INTERNAL VOLUME	8.4	CUBIC METERS
POWER	23.5	KW
NO. OF PORTS	6.	

POINTING & DISTURBANCE SUMMARY FOR LOW INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350
CM01						----------									
CM02	----------														
CM03								-							
CM04								-							
SA02	**********														
SA03	----------														
SA04	----------														
CC03								-							
CC04								-							
CC05								-							
CM05	----------														
CM06								-							
CM07	----------														
CM08								-							
OT01	----------														
OT02	----------														
OT05	----------														
TS02							-----								
SA05	----------														

POINTING & DISTURBANCE SUMMARY FOR HIGH INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

0	25	50	75	100	125	150	175	200	225	250	275	300	325	350

S001 00000000000000000000000000000000000000000000000000000000000000

S002 00

S003 0000000000

S004 00000000000000000000000000000000000000

OT03 ----------

OT04 ----------

SP02 0000000

SA01 **********

* * * SPACE STATION OPERATIONS ANALYSIS FOR YEAR 2002 * * *

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 1
NUMBER OF FLIGHTS: 1 PRIME MISSION: **MULTIBEAM COMM SATELLITE OUTCOME # IS 0 KEY IS CC04
INCLINATION IS 0.00
CODE IS SSCM
SECOND MISSION: TMS PROP DELIV OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS 1.661

SP STA SYS OPS 10.075

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 8.756AWAY 4.200
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 6.987

S/C SYS - ELEC 9.160

S/C SYS - MECH 7.470

S/C SYS - FLUIDS 7.879

SP STA SYS OPS 16.972

EVA CRANE OP 8.636

ORIGINAL PAGE IS
OF POOR QUALITY

EVA SERVICE TECH 15.881

MANNED OTV PILOT 8.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.993
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.700
TEST & C/O = 3.400
MODULE MATE = 0.152
FAB STRUCT = 0.246

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 11.650
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 5.776

S/C SYS - ELEC 3.730

S/C SYS - MECH 3.730

S/C SYS - FLUIDS 3.570

SP STA SYS OPS 23.299

EVA CRANE OP 8.502

EVA SERVICE TECH 5.562

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	11.6
OTV OPERATIONS	8.8
OTV MISSIONS	4.2

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 2
NUMBER OF FLIGHTS: 1 PRIME MISSION: **INTELSAT-7,7A CLASS COMSAT OUTCOME # IS 0 KEY IS CC03
INCLINATION IS 0.00
CODE IS FXCL
SECOND MISSION: TMS CAB DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911

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STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS	1.661
SP STA SYS OPS	10.075
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

OTV OPERATIONS

UNADJUSTED DURATIONS

MAINTAIN STAGE	=	1.150
MATE TO PAYLD	=	0.131
STAGE/STAGE MATE	=	0.210
OTV/PLD C/O	=	0.555
LAUNCH	=	0.082
CAPTURE	=	0.042
MISSION OPS	=	2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 8.756 AWAY 4.200

FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	6.987
S/C SYS - ELEC	9.160
S/C SYS - MECH	7.470
S/C SYS - FLUIDS	7.879
SP STA SYS OPS	16.972
EVA CRANE OP	8.636
EVA SERVICE TECH	15.881
MANNED OTV PILOT	8.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.200
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.280
TEST & C/O	=	0.486

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 2.146

FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	0.816
S/C SYS - ELEC	0.510

S/C SYS - MECH 0.510

S/C SYS - FLUIDS 0.510

SP STA SYS OPS 4.292

EVA CRANE OP 2.251

EVA SERVICE TECH 1.075

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	2.1
OTV OPERATIONS	8.8
OTV MISSIONS	4.2

TYPE #1 = 2 TYPE #2 = 2

***>> FLIGHT NO. 3
NUMBER OF FLIGHTS: 4 PRIME MISSION: **RECONFIGURABLE COMM. SATELLI OUTCOME # IS 0 KEY IS CC05
INCLINATION IS 0.00
CODE IS FXCM
SECOND MISSION: CRYSTAL GROWTH RESUP-2 OUTCOME # IS 0
KEY IS CM04
CODE IS PMCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3629
ADJ STS DURATION AT SP STA FOR TOTAL OF 4 FLIGHTS: 10.606
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS 6.097

SP STA SYS OPS 29.536

EVA CRANE OP 20.160

EVA SERVICE TECH 20.160

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 7.000

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ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 4 FLIGHTS:
AT SPACE STA 77.025AWAY 58.800

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	69.947
S/C SYS - ELEC	78.641
S/C SYS - MECH	71.879
S/C SYS - FLUIDS	72.970
SP STA SYS OPS	57.127
EVA CRANE OP	24.464
EVA SERVICE TECH	53.444
MANNED OTV PILOT	118.638

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.140
TEST & C/O	=	3.400
MODULE MATE	=	0.152

ADJUSTED DUR FOR 4 FLIGHTS, AT SPACE STATION 39.824

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	23.103
S/C SYS - ELEC	14.918
S/C SYS - MECH	14.918
S/C SYS - FLUIDS	14.280
SP STA SYS OPS	79.649
EVA CRANE OP	22.529
EVA SERVICE TECH	20.177

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 3 IN MANDAYS/YR

STS OPERATIONS	10.6
CONSTRUCTION OPERATIONS	39.8
OTV OPERATIONS	77.0
OTV MISSIONS	58.8

UNADJUSTED DURATIONS

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SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 4 FLIGHTS, AT SPACE STATION 46.696
SECOND MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 26.497

S/C SYS - ELEC 17.279

S/C SYS - MECH 17.279

S/C SYS - FLUIDS 16.321

SP STA SYS OPS 93.391

EVA CRANE OP 28.106

EVA SERVICE TECH 25.754

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 3 IN MANDAYS/YR

STS OPERATIONS	10.6
CONSTRUCTION OPERATIONS	46.7
OTV OPERATIONS	77.0
OTV MISSIONS	58.8

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 4
NUMBER OF FLIGHTS: 1 PRIME MISSION: **CRYSTAL GROWTH RESUP-2 OUTCOME # IS 0 KEY IS CM04
INCLINATION IS 29.00
CODE IS PMCL
SECOND MISSION: TMS CAB DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3467
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS 1.456

SP STA SYS OPS 9.819

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

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CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.718
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	0.848
S/C SYS - ELEC	0.590
S/C SYS - MECH	0.590
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	3.436
EVA CRANE OP	1.394
EVA SERVICE TECH	1.394

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 4 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 5
NUMBER OF FLIGHTS: 1 PRIME MISSION: **CRYSTAL GROWTH RESUP-2 OUTCOME # IS 0 KEY IS CM04
INCLINATION IS 29.00
CODE IS PMCL
SECOND MISSION: TMS PROP DELIV OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3304
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS	1.388
SP STA SYS OPS	9.733

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EVA CRANE OP          7.560

EVA SERVICE TECH      7.560

                              CONSTRUCTION OPERATIONS

 UNADJUSTED DURATIONS
SETUP/TAKEDOWN    =     0.200
MATE TO FIXT      =     0.056
TEST & C/O        =     0.486
MODULE MATE       =     0.076

ADJUSTED DUR FOR   1 FLIGHTS, AT SPACE STATION   1.718
FIRST             MISSION RESULTS
CREW SKILL         MANDAYS

S/C SYS - DATA        0.848

S/C SYS - ELEC        0.590

S/C SYS - MECH        0.590

S/C SYS - FLUIDS      0.510

SP STA SYS OPS.       3.436

EVA CRANE OP          1.394

EVA SERVICE TECH      1.394


                  ***DURATION SUMMARY FORFIRST           MISSION FLIGHT NO.    5 IN MANDAYS/YR***

    STS OPERATIONS                3.9
    CONSTRUCTION OPERATIONS       1.7
    OTV OPERATIONS                0.0
    OTV MISSIONS                  0.0

TYPE #1 =    3 TYPE #2 =    4

***>> FLIGHT NO.   6
  NUMBER OF FLIGHTS:   1 PRIME MISSION: PASSIVE MICW      RADIOMETER      OUTCOME # IS    0 KEY IS TM03
 INCLINATION IS    29.00
CODE IS SPCM
SECOND MISSION: TMS DELIVERY                        OUTCOME # IS    0

                              SHUTTLE OPERATIONS

 UNADJUSTED DURATIONS
ORBITER ARRIVE    =  0.0416
ORBITER OFFLOAD   =  0.6000
ORBITER OFFLOAD   =  0.6000  (MISSION 2)
ORBITER RELOAD    =  0.6000  (MISSION 2)
ORBITER DEPART    =  0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF   1 FLIGHTS:   3.911
STS OPERATIONS    MISSION RESULTS
CREW SKILL         MANDAYS
```

SP STA SYS OPS	7.998
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	17.640
TEST & C/O	=	3.400
MODULE MATE	=	0.228

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 46.866

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	5.808
S/C SYS - ELEC	3.809
S/C SYS - MECH	3.809
S/C SYS - FLUIDS	3.570
SP STA SYS OPS	93.731
EVA CRANE OP	79.451
EVA SERVICE TECH	5.363

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 6 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	46.9
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 7
NUMBER OF FLIGHTS: 20 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS

ORBITER ARRIVE	=	0.0832
ORBITER OFFLOAD	=	0.6000
ORBITER DEPART	=	0.0210

ADJ STS DURATION AT SP STA FOR TOTAL OF 20 FLIGHTS: 29.576

STS OPERATIONS CREW SKILL	MISSION RESULTS MANDAYS

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SP STA SYS OPS 64.411

EVA CRANE OP 50.400

EVA SERVICE TECH 50.400

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 7 IN MANDAYS/YR

STS OPERATIONS	29.6
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 8
NUMBER OF FLIGHTS: 12 PRIME MISSION: GLASSPROC OPTICA LFIBERS RESUPP OUTCOME # IS 0 KEY IS CM08
INCLINATION IS 29.00
CODE IS SPCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 12 FLIGHTS: 17.746
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 38.647

EVA CRANE OP 30.240

EVA SERVICE TECH 30.240

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.070
TEST & C/O = 0.486
MODULE MATE = 0.152

ADJUSTED DUR FOR 12 FLIGHTS, AT SPACE STATION 24.293
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 10.564

S/C SYS - ELEC 8.039

S/C SYS - MECH 8.039

S/C SYS - FLUIDS 6.124

SP STA SYS OPS 48.586

EVA CRANE OP 24.091

EVA SERVICE TECH 20.563

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 8 IN MANDAYS/YR

STS OPERATIONS	17.7
CONSTRUCTION OPERATIONS	24.3
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 9
NUMBER OF FLIGHTS: 8 PRIME MISSION: LOW INCL STA RESUPPLY OUTCOME # IS 0 KEY IS OT02
INCLINATION IS 29.00
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 8 FLIGHTS: 21.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 45.924

EVA CRANE OP 40.320

EVA SERVICE TECH 40.320

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 9 IN MANDAYS/YR

STS OPERATIONS	21.9
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 10
NUMBER OF FLIGHTS: 2 PRIME MISSION: HI-INCL STATION RESUPPLY OUTCOME # IS 0 KEY IS OT04
INCLINATION IS 98.00
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 5.478
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	11.481
EVA CRANE OP	10.080
EVA SERVICE TECH	10.080

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 10 IN MANDAYS/YR

STS OPERATIONS	5.5
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

PAYLOADS SERVICING ANALYSIS

PAYLOAD WITH KEY S001 EARTH OBSERV PALLET

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 150.000

UPDATED WORK DURATION AT SP STA 150.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	15.000
EARTH, OCEAN OBS	150.000
S/C SYS - ELEC	7.500
S/C SYS - FLUIDS	7.500
SP STA SYS OPS	7.500

DURATION SUMMARY FOR PAYLOAD NO. 1 S001 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	150.0

PAYLOAD WITH KEY S002 SYNTH APERTURE RADAR

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 5.000

UPDATED WORK DURATION AT SP STA 5.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	0.500
EARTH, OCEAN OBS	5.000
S/C SYS - ELEC	0.250
S/C SYS - FLUIDS	0.250

SP STA SYS OPS 0.250

DURATION SUMMARY FOR PAYLOAD NO. 2 S002 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 5.0

PAYLOAD WITH KEY S003 HETERODYNING CO2 LIDAR

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 5.000

UPDATED WORK DURATION AT SP STA 5.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 0.500

EARTH, OCEAN OBS 5.000

S/C SYS - ELEC 0.250

S/C SYS - FLUIDS 0.250

SP STA SYS OPS 0.250

DURATION SUMMARY FOR PAYLOAD NO. 3 S003 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 5.0

PAYLOAD WITH KEY S004 UPPER ATMOS RESEARCH PKG

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 145.000

UPDATED WORK DURATION AT SP STA 145.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	14.500
EARTH, OCEAN OBS	145.000
S/C SYS - ELEC	7.250
S/C SYS - FLUIDS	7.250
SP STA SYS OPS	7.250

DURATION SUMMARY FOR PAYLOAD NO. 4 S004 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	145.0

PAYLOAD WITH KEY OT03 SPACE STATION MODULES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 5 OT03 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	67.200
SP STA SYS OPS	470.400
EVA CRANE OP	67.200
EVA SERVICE TECH	67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 5 OT03 IN MANDAYS/YR

SERVICING OPERATIONS	336.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY OT04 HI-INCL STATION RESUPPLY

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 6 OT04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SP02 SPACE PHYSICS PALLET

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
PHYSICS SCIENCE = 54.000

UPDATED WORK DURATION AT SP STA 54.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 5.400

PHYS SCI RESEARC 54.000

S/C SYS - ELEC 2.700

S/C SYS - FLUIDS 2.700

SP STA SYS OPS 2.700

DURATION SUMMARY FOR PAYLOAD NO. 8 SP02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 54.0

PAYLOAD WITH KEY SA01 VLBI/COSMIC RAY PKG

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 67.000

UPDATED WORK DURATION AT SP STA 67.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	6.700
ASTROPHSICS	67.000
S/C SYS - ELEC	3.350
S/C SYS - FLUIDS	3.350
SP STA SYS OPS	3.350

DURATION SUMMARY FOR PAYLOAD NO. 9 SA01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	67.0

PAYLOAD WITH KEY SL04 LIFESCIENCES RES FAC

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 191.000

UPDATED WORK DURATION AT SP STA 191.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	19.100
MED/BIO RESEARCH	191.000
S/C SYS - ELEC	9.550
S/C SYS - FLUIDS	9.550
SP STA SYS OPS	9.550

DURATION SUMMARY FOR PAYLOAD NO. 14 SL04 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	191.0

PAYLOAD WITH KEY SL05 CENTRIFUGE (ADD TO LSRF)

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 91.000

UPDATED WORK DURATION AT SP STA 91.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	9.100
MED/BIO RESEARCH	91.000
S/C SYS - ELEC	4.550
S/C SYS - FLUIDS	4.550
SP STA SYS OPS	4.550

DURATION SUMMARY FOR PAYLOAD NO. 15 SL05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 91.0

PAYLOAD WITH KEY SL06 CLOSED ENV LSS EXPT MOD

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 547.500

UPDATED WORK DURATION AT SP STA 547.5 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	54.750
MED/BIO RESEARCH	547.500
S/C SYS - ELEC	27.375
S/C SYS - FLUIDS	27.375
SP STA SYS OPS	27.375

DURATION SUMMARY FOR PAYLOAD NO. 16 SL06 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 547.5

PAYLOAD WITH KEY CM01 MATLS SCIENCE LAB

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SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 300.000

UPDATED WORK DURATION AT SP STA 300.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 17 CM01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	300.0

PAYLOAD WITH KEY CM02 CRYSTAL GROWTH FACTORY/PLAT

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	36.000
TEST & C/O	=	1.944
TMS LAUNCH	=	0.328
TMS OPS	=	12.000
TMS CREW OPS	=	12.000
TMS CAPTURE/BRTH	=	0.168
TMS MAINT/REFUEL	=	4.400
CREW MOD MAINT	=	6.840

ADJUSTED SERVICING TIME FOR 18 CM02 154.7 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	61.471
S/C SYS - DATA	126.739
S/C SYS - ELEC	54.818
S/C SYS - MECH	125.800
S/C SYS - FLUIDS	44.206
SP STA SYS OPS	143.136
EVA SERVICE TECH	56.952
TMS PILOT	254.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

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DURATION SUMMARY FOR PAYLOAD NO. 18 CM02 IN MANDAYS/YR

SERVICING OPERATIONS 154.7
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM03 CRYSTAL GROWTH RESUP-1

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	12.000
TEST & C/O	=	1.458
TMS LAUNCH	=	0.246
TMS OPS	=	9.000
TMS CREW OPS	=	9.000
TMS CAPTURE/BRTH	=	0.126
TMS MAINT/REFUEL	=	3.300
CREW MOD MAINT	=	5.130

ADJUSTED SERVICING TIME FOR 19 CM03 84.5 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	30.353
S/C SYS - DATA	79.304
S/C SYS - ELEC	25.364
S/C SYS - MECH	78.600
S/C SYS - FLUIDS	17.404
SP STA SYS OPS	75.852
EVA SERVICE TECH	42.714
TMS PILOT	127.562

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 19 CM03 IN MANDAYS/YR

SERVICING OPERATIONS 84.5
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM04 CRYSTAL GROWTH RESUP-2

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	16.000
TEST & C/O	=	1.944

TMS LAUNCH = 0.328
TMS OPS = 12.000
TMS CREW OPS = 12.000
TMS CAPTURE/BRTH = 0.168
TMS MAINT/REFUEL = 4.400
CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 20 CM04 112.7 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	40.471
S/C SYS - DATA	105.739
S/C SYS - ELEC	33.818
S/C SYS - MECH	104.800
S/C SYS - FLUIDS	23.206
SP STA SYS OPS	101.136
EVA SERVICE TECH	56.952
TMS PILOT	170.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 20 CM04 IN MANDAYS/YR

SERVICING OPERATIONS 112.7
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SA02 ASTRO TELESCOPE CLUSTER

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 65.000

UPDATED WORK DURATION AT SP STA 65.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	6.500
ASTROPHSICS	65.000
S/C SYS - ELEC	3.250

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OF POOR QUALITY

S/C SYS - FLUIDS	3.250
SP STA SYS OPS	3.250

DURATION SUMMARY FOR PAYLOAD NO. 21 SA02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	65.0

PAYLOAD WITH KEY SA03 ASTROPHYSICS FREE-FLYER

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	2.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 22 SA03 30.1 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	11.078
S/C SYS - DATA	36.574
S/C SYS - ELEC	6.355
S/C SYS - MECH	25.324
S/C SYS - FLUIDS	4.313
SP STA SYS OPS	33.323
EVA SERVICE TECH	14.238
TMS PILOT	34.121

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 22 SA03 IN MANDAYS/YR

SERVICING OPERATIONS	30.1
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY SA04 ASTROPHYSICS OBSERVATORIES

SATELLITE SERVICING OPERATIONS

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OF POOR QUALITY

UNADJUSTED DURATIONS

REMOTE SERVICE	=	6.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 23 SA04 38.5 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.278
S/C SYS - DATA	40.774
S/C SYS - ELEC	10.555
S/C SYS - MECH	29.524
S/C SYS - FLUIDS	8.513
SP STA SYS OPS	41.723
EVA SERVICE TECH	14.238
TMS PILOT	50.921

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 23 SA04 IN MANDAYS/YR

SERVICING OPERATIONS	38.5
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CC03 INTELSAT-7,7A CLASS COMSAT

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 26 CC03 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CC04 MULTIBEAM COMM. SATELLITE

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 27 CC04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC05 RECONFIGURABLE COMM. SATELLITE

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 28 CC05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM05 CONT FLOW ELEC- TROPH PLATFORM

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

ADJUSTED SERVICING TIME FOR 29 CM05 0.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 29 CM05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM06 CONTINUOUS FLOW ELECTRO RESUPP

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	48.000
TEST & C/O	=	1.944
TMS LAUNCH	=	0.328
TMS OPS	=	12.000
TMS CREW OPS	=	12.000
TMS CAPTURE/BRTH	=	0.168
TMS MAINT/REFUEL	=	4.400
CREW MOD MAINT	=	6.840

ADJUSTED SERVICING TIME FOR 30 CM06 179.9 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	74.071
S/C SYS - DATA	139.339
S/C SYS - ELEC	67.418
S/C SYS - MECH	138.400
S/C SYS - FLUIDS	56.806
SP STA SYS OPS	168.336
EVA SERVICE TECH	56.952
TMS PILOT	304.483

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 30 CM06 IN MANDAYS/YR

SERVICING OPERATIONS	179.9
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM07 GLASS PROC PLANT

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	50.000

UPDATED WORK DURATION AT SP STA 50.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 31 CM07 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	50.0

PAYLOAD WITH KEY CM08 GLASSPROC OPTICA LFIBERS RESUPP

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 8.000

UPDATED WORK DURATION AT SP STA 8.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 32 CM08 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	8.0

PAYLOAD WITH KEY OT01 LOW INCL STA MODULE DEL

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 33 OT01 336.0 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	67.200
SP STA SYS OPS	470.400
EVA CRANE OP	67.200
EVA SERVICE TECH	67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 33 OT01 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT02 LOW INCL STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 34 OT02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT05 HI-ALT STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 35 OT05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY TM03 PASSIVE MICW RADIOMETER

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 148.000

UPDATED WORK DURATION AT SP STA 148.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 29.600

ENGINEERING	148.000
S/C SYS - DATA	22.200
S/C SYS - ELEC	7.400
S/C SYS - MECH	7.400
S/C SYS - FLUIDS	29.600
SP STA SYS OPS	14.800
EVA CRANE OP	7.400
EVA SERVICE TECH	7.400
MANNED OTV PILOT	22.200

DURATION SUMMARY FOR PAYLOAD NO. 43 TM03 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 148.0

PAYLOAD WITH KEY TS02 TECH DEVEL CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 20.000

UPDATED WORK DURATION AT SP STA 20.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	4.000
ENGINEERING	20.000
S/C SYS - DATA	3.000
S/C SYS - ELEC	1.000
S/C SYS - MECH	1.000
S/C SYS - FLUIDS	4.000
SP STA SYS OPS	2.000
EVA CRANE OP	1.000
EVA SERVICE TECH	1.000

MANNED OTV PILOT 3.000

DURATION SUMMARY FOR PAYLOAD NO. 45 TS02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 20.0

PAYLOAD WITH KEY SA05 LARGE RADIO , TELESCOPE

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 10.000
TEST & C/O = 10.100
TMS LAUNCH = 0.082
TMS OPS = 3.000
TMS CREW OPS = 3.000
TMS CAPTURE/BRTH = 0.042
TMS MAINT/REFUEL = 1.100
CREW MOD MAINT = 1.710

ADJUSTED SERVICING TIME FOR 46 SA05 61.0 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	26.512
S/C SYS - DATA	73.114
S/C SYS - ELEC	14.755
S/C SYS - MECH	36.538
S/C SYS - FLUIDS	14.120
SP STA SYS OPS	78.263
EVA SERVICE TECH	14.238
TMS PILOT	67.721

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 46 SA05 IN MANDAYS/YR

SERVICING OPERATIONS 61.0
SCIENCE & TECH DEMO 0.0

SKILL MIX SUMMARIES LOW INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***		***COMMERC MISSIONS***		***TECH DEV MISSIONS**		****OPER SUPPORT*****	
	OPS SERV	MSN OP CONST	OPS SERV	MSN OP CONST	OPS SERV	MSN OP CONST	OPS SERV	MSN OP CONST

NO SPECIAL SKILL	0.0	52.9	89.5	0.0	0.0	206.4	0.0	0.0	0.0	0.0	33.6	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	829.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	168.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	65.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	150.5	0.0	0.0	83.9	451.1	0.0	68.5	0.0	0.0	25.2	5.8	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	31.7	44.7	0.0	97.0	181.4	0.0	45.7	0.0	0.0	8.4	3.8	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	91.4	0.0	0.0	86.8	447.6	0.0	45.7	0.0	0.0	8.4	3.8	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	26.9	44.7	0.0	79.3	141.6	0.0	41.8	0.0	0.0	33.6	3.6	21.7	0.0	0.0	0.0
SP STA SYS OPS	0.0	153.3	44.7	0.0	177.5	488.5	0.0	256.1	2.5	0.0	16.8	93.7	137.3	470.4	0.0	0.0
EVA CRANE OP	0.0	0.0	0.0	0.0	142.5	0.0	0.0	88.3	2.5	0.0	8.4	79.5	75.6	67.2	0.0	0.0
EVA SERVICE TECH	0.0	42.7	0.0	0.0	186.0	213.6	0.0	75.9	2.5	0.0	8.4	5.4	75.6	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	136.0	0.0	0.0	0.0	0.0	0.0	25.2	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	152.8	0.0	0.0	0.0	856.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
1820.	4597.	539.	982.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	449.5
MED/BIO RESEARCH	829.5
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	0.0
ENGINEERING	168.0
ASTROPHSICS	65.0
S/C SYS - DATA	785.0
S/C SYS - ELEC	412.6
S/C SYS - MECH	683.7
S/C SYS - FLUIDS	393.3
SP STA SYS OPS	1840.8
EVA CRANE OP	464.0
EVA SERVICE TECH	677.3
MANNED OTV PILOT	161.2
TMS PILOT	1009.0
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 21.7 PEOPLE

SKILL MIX SUMMARIES HIGH INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN	OP CONST	OPS	SERV	MSN	OP CONST	OPS	SERV	MSN	OP CONST	OPS	SERV	MSN	OP CONST
NO SPECIAL SKILL	0.0	0.0	42.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	54.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	305.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	65.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	0.0	21.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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OF POOR QUALITY

S/C SYS - MECH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	0.0	21.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SP STA SYS OPS	0.0	0.0	21.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EVA CRANE OP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.5	470.4	0.0	0.0
EVA SERVICE TECH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
TMS PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
533.	0.	0.	704.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	109.8
MED/BIO RESEARCH	0.0
PHYS SCI RESEARC	54.0
EARTH, OCEAN OBS	305.0
ENGINEERING	0.0
ASTROPHSICS	67.0
S/C SYS - DATA	0.0
S/C SYS - ELEC	21.3
S/C SYS - MECH	0.0
S/C SYS - FLUIDS	21.3
SP STA SYS OPS	503.2
EVA CRANE OP	77.3
EVA SERVICE TECH	77.3
MANNED OTV PILOT	0.0
TMS PILOT	0.0
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 3.4 PEOPLE

LOW INCLINATION

DURATION SUMMARY FOR YEAR 2002 IN MANDAYS/YR

STS OPERATIONS	99.4
CONSTRUCTION	174.9
OTV OPERATIONS	94.5
OTV MISSIONS	67.2
SERVICING OPERATIONS	997.5
SCIENCE & TECH DEMO	1420.5

HIGH INCLINATION

DURATION SUMMARY FOR YEAR 2002 IN MANDAYS/YR

STS OPERATIONS	5.5
CONSTRUCTION	0.0
OTV OPERATIONS	0.0

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OF POOR QUALITY

OTV MISSIONS	0.0
SERVICING OPERATIONS	336.0
SCIENCE & TECH DEMO	426.0

SUMMARY OF SPACE STATION PAYLOADS THIS YEAR

KEY	TITLE	PLCODE	INCL	PK POWER	DUTY CYCLE
S001	EARTH OBSERV PALLET	SPCL	98.0	3.5	82.2
S002	SYNTH APERTURE RADAR	SPCL	98.0	10.0	2.7
S003	HETERODYNING CO2 LIDAR	SPXX	98.0	1.0	13.7
S004	UPPER ATMOS RESEARCH PKG	SPCL	98.0	2.2	54.8
OT03	SPACE STATION MODULES	SSSS	98.0	15.0	100.0
OT04	HI-INCL STATION RESUPPLY	SORS	98.0	1.0	100.0
SP02	SPACE PHYSICS PALLET	SPCM	98.0	10.0	9.9
SA01	VLBI/COSMIC RAY PKG	SPCL	98.0	2.0	100.0
SL04	LIFESCIENCES RES FAC	SPXX	29.0	12.2	100.0
SL05	CENTRIFUGE (ADD TO LSRF)	SSCL	29.0	4.0	100.0
SL06	CLOSED ENV LSS EXPT MOD	SPCL	29.0	9.7	100.0
CM01	MATLS SCIENCE LAB	SPXX	29.0	25.0	35.6
CM02	CRYSTAL GROWTH FACTORY/PLAT	PMCL	29.0	0.0	100.0
CM03	CRYSTAL GROWTH RESUP-1	PMXX	29.0	0.0	0.5
CM04	CRYSTAL GROWTH RESUP-2	PMCL	29.0	0.0	0.5
SA02	ASTRO TELESCOPE CLUSTER	SPXX	29.0	4.0	100.0
SA03	ASTROPHYSICS FREE-FLYER	FMXM	29.0	0.0	100.0
SA04	ASTROPHYSICS	FMXM	29.0	1.0	100.0

OBSERVATORIES

CC03	INTELSAT-7,7A CLASS COMSAT	FXCL	0.0	0.0	0.0
CC04	MULTIBEAM COMM. SATELLITE	SSCM	0.0	0.0	0.0
CC05	RECONFIGURABLE COMM. SATELLITE	FXCM	0.0	0.0	1.9
CM05	CONT FLOW ELEC-TROPH PLATFORM	PMCL	29.0	0.0	100.0
CM06	CONTINUOUS FLOW ELECTRO RESUPP	PMXL	29.0	2.0	0.0
CM07	GLASS PROC PLANT	SPCL	29.0	10.6	100.0
CM08	GLASSPROC OPTICA LFIBERS RESUPP	SPCL	29.0	0.0	0.0
OT01	LOW INCL STA MODULE DEL	SSSS	29.0	20.0	100.0
OT02	LOW INCL STA RESUPPLY	SORS	29.0	0.0	100.0
OT05	HI-ALT STA RESUPPLY	OMSB	29.0	0.0	100.0
TM03	PASSIVE MICW RADIOMETER	SPCM	29.0	4.0	40.5
TS02	TECH DEVEL CARRY-ONS	SSSA	29.0	0.5	6.8
SA05	LARGE RADIO TELESCOPE	FMCH	29.0	0.0	100.0

LOW INCLINATION

PEAK POWER	AVERAGE POWER
93.0	72.1

HIGH INCLINATION

PEAK POWER	AVERAGE POWER
44.7	23.5

RESOURCES SUMMARY FOR LOW INCLINATION SPACE STATION

INTERNAL VOLUME	4.0 CUBIC METERS
POWER	72.1 KW
NO. OF PORTS	7.

RESOURCES SUMMARY FOR HIGH INCLINATION SPACE STATION

INTERNAL VOLUME	8.4	CUBIC METERS
POWER	23.5	KW
NO. OF PORTS	6.	

POINTING & DISTURBANCE SUMMARY FOR LOW INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350
CM01						----------									
CM02	----------														
CM03							-								
CM04							-								
SA02	**********														
SA03	----------														
SA04	----------														
CC03							-								
CC04							-								
CC05							-								
CM05	----------														
CM06							-								
CM07	----------														
CM08							-								
OT01	----------														
OT02	----------														
OT05	----------														
TM03	000000000000000000000000000														
TS02							-----								
SA05	----------														

POINTING & DISTURBANCE SUMMARY FOR HIGH INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

```
                          1   1   1   1   2   2   2   2   3   3   3
      2   5   7   0   2   5   7   0   2   5   7   0   2   5
  0   5   0   5   0   5   0   5   0   5   0   5   0   5   0
SO01 000000000000000000000000000000000000000000000000000000000000
SO02 00
SO03 0000000000
SO04 00000000000000000000000000000000000000
OT03 ------------------------------------------------------------------------
OT04 ------------------------------------------------------------------------
SP02 0000000
SA01 ************************************************************************
```

* * * SPACE STATION OPERATIONS ANALYSIS FOR YEAR 2003 * * *

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 1
NUMBER OF FLIGHTS: 1 PRIME MISSION: **CRYSTAL GROWTH FACTORY/PLAT OUTCOME # IS 0 KEY IS CM02
INCLINATION IS 29.00
CODE IS PMCL
SECOND MISSION: TMS CAB DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3792
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

CREW SKILL	MANDAYS
S/C SYS - FLUIDS	1.593
SP STA SYS OPS	9.989
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.718
FIRST MISSION RESULTS
CREW SKILL MANDAYS

CREW SKILL	MANDAYS
S/C SYS - DATA	0.848
S/C SYS - ELEC	0.590
S/C SYS - MECH	0.590
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	3.436
EVA CRANE OP	1.394
EVA SERVICE TECH	1.394

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 2
NUMBER OF FLIGHTS: 1 PRIME MISSION: **INTELSAT-7,7A CLASS COMSAT OUTCOME # IS 0 KEY IS CC03
INCLINATION IS 0.00
CODE IS FXCL
SECOND MISSION: TMS CAB DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - FLUIDS	1.661
SP STA SYS OPS	10.075
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 8.756AWAY 4.200
FIRST MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - DATA	6.987
S/C SYS - ELEC	9.160
S/C SYS - MECH	7.470

S/C SYS - FLUIDS	7.879
SP STA SYS OPS	16.972
EVA CRANE OP	8.636
EVA SERVICE TECH	15.881
MANNED OTV PILOT	8.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.280
TEST & C/O = 0.486

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 2.146
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	0.816
S/C SYS - ELEC	0.510
S/C SYS - MECH	0.510
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	4.292
EVA CRANE OP	2.251
EVA SERVICE TECH	1.075

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	2.1
OTV OPERATIONS	8.8
OTV MISSIONS	4.2

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 3
NUMBER OF FLIGHTS: 1 PRIME MISSION: **INTELSAT-7,7A CLASS COMSAT OUTCOME # IS 0 KEY IS CC03
INCLINATION IS 0.00
CODE IS FXCI
SECOND MISSION: TMS PROP DELIV OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)

ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS 1.661

SP STA SYS OPS 10.075

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 8.756AWAY 4.200
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 6.987

S/C SYS - ELEC 9.160

S/C SYS - MECH 7.470

S/C SYS - FLUIDS 7.879

SP STA SYS OPS 16.972

EVA CRANE OP 8.636

EVA SERVICE TECH 15.881

MANNED OTV PILOT 8.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.280
TEST & C/O = 0.486

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 2.146
FIRST MISSION RESULTS
CREW SKILL MANDAYS

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S/C SYS - DATA        0.816

S/C SYS - ELEC        0.510

S/C SYS - MECH        0.510

S/C SYS - FLUIDS      0.510

SP STA SYS OPS        4.292

EVA CRANE OP          2.251

EVA SERVICE TECH      1.075


                ***DURATION SUMMARY FORFIRST          MISSION FLIGHT NO.     3 IN MANDAYS/YR***

    STS OPERATIONS                3.9
    CONSTRUCTION OPERATIONS       2.1
    OTV OPERATIONS                8.8
    OTV MISSIONS                  4.2

TYPE #1 =     2 TYPE #2 =     2

***>> FLIGHT NO.   4
  NUMBER OF FLIGHTS:    4 PRIME MISSION: **RECONFIGURABLE    COMM. SATELLI OUTCOME # IS     0 KEY IS CC05
 INCLINATION IS      0.00
CODE IS FXCM
SECOND MISSION: CRYSTAL GROWTH    RESUP-2          OUTCOME # IS     0
KEY IS CM04
CODE IS PMCL

                          SHUTTLE OPERATIONS

 UNADJUSTED DURATIONS
ORBITER ARRIVE    =  0.0416
ORBITER OFFLOAD   =  0.6000
ORBITER OFFLOAD   =  0.6000  (MISSION 2)
ORBITER DEPART    =  0.0210
ORBITER PROP XFR  =  0.3629
ADJ STS DURATION AT SP STA FOR TOTAL OF   4 FLIGHTS:  10.606
STS OPERATIONS   MISSION RESULTS
CREW SKILL        MANDAYS

S/C SYS - FLUIDS      6.097

SP STA SYS OPS       29.536

EVA CRANE OP         20.160

EVA SERVICE TECH     20.160


                          OTV OPERATIONS

 UNADJUSTED DURATIONS
MAINTAIN STAGE    =     1.150
MATE TO PAYLD     =     0.131
STAGE/STAGE MATE  =     0.210
```

OTV/PLD C/O	=	0.555
LAUNCH	=	0.082
CAPTURE	=	0.042
MISSION OPS	=	7.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 4 FLIGHTS:
AT SPACE STA 77.025AWAY 58.800

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	69.947
S/C SYS - ELEC	78.641
S/C SYS - MECH	71.879
S/C SYS - FLUIDS	72.970
SP STA SYS OPS	57.127
EVA CRANE OP	24.464
EVA SERVICE TECH	53.444
MANNED OTV PILOT	118.638

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.140
TEST & C/O	=	3.400
MODULE MATE	=	0.152

ADJUSTED DUR FOR 4 FLIGHTS, AT SPACE STATION 39.824

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	23.103
S/C SYS - ELEC	14.918
S/C SYS - MECH	14.918
S/C SYS - FLUIDS	14.280
SP STA SYS OPS	79.649
EVA CRANE OP	22.529
EVA SERVICE TECH	20.177

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 4 IN MANDAYS/YR

STS OPERATIONS	10.6
CONSTRUCTION OPERATIONS	39.8

```
     OTV OPERATIONS                77.0
     OTV MISSIONS                  58.8

  UNADJUSTED DURATIONS
 SETUP/TAKEDOWN    =     0.200
 MATE TO FIXT      =     0.056
 TEST & C/O        =     0.486
 MODULE MATE       =     0.076

 ADJUSTED DUR FOR   4 FLIGHTS, AT SPACE STATION  46.696
 SECOND            MISSION RESULTS
 CREW SKILL         MANDAYS

 S/C SYS - DATA       26.497

 S/C SYS - ELEC       17.279

 S/C SYS - MECH       17.279

 S/C SYS - FLUIDS     16.321

 SP STA SYS OPS       93.391

 EVA CRANE OP         28.106

 EVA SERVICE TECH     25.754



                ***DURATION SUMMARY FORSECOND          MISSION FLIGHT NO.     4 IN MANDAYS/YR***

     STS OPERATIONS                10.6
     CONSTRUCTION OPERATIONS       46.7
     OTV OPERATIONS                77.0
     OTV MISSIONS                  58.8

 TYPE #1 =     2 TYPE #2 =     4

 ***>> FLIGHT NO.    5
   NUMBER OF FLIGHTS:    2 PRIME MISSION: **CRYSTAL GROWTH     RESUP-2        OUTCOME # IS     0 KEY IS CM04
  INCLINATION IS     29.00
 CODE IS PMCL
 SECOND MISSION: TMS PROP DELIV                        OUTCOME # IS     0

                            SHUTTLE OPERATIONS

  UNADJUSTED DURATIONS
 ORBITER ARRIVE    =  0.0416
 ORBITER OFFLOAD   =  0.6000
 ORBITER OFFLOAD   =  0.6000  (MISSION 2)
 ORBITER RELOAD    =  0.6000  (MISSION 2)
 ORBITER DEPART    =  0.0210
 ORBITER PROP XFR  =  0.3304
 ADJ STS DURATION AT SP STA FOR TOTAL OF   2 FLIGHTS:    7.823
 STS OPERATIONS    MISSION RESULTS
 CREW SKILL         MANDAYS

 S/C SYS - FLUIDS     2.776

 SP STA SYS OPS      19.467
```

EVA CRANE OP 15.120

EVA SERVICE TECH 15.120

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 2 FLIGHTS, AT SPACE STATION 3.436
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 1.697

S/C SYS - ELEC 1.180

S/C SYS - MECH 1.180

S/C SYS - FLUIDS 1.021

SP STA SYS OPS 6.871

EVA CRANE OP 2.789

EVA SERVICE TECH 2.789

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 5 IN MANDAYS/YR

STS OPERATIONS 7.8
CONSTRUCTION OPERATIONS 3.4
OTV OPERATIONS 0.0
OTV MISSIONS 0.0

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 6
NUMBER OF FLIGHTS: 1 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL
SECOND MISSION: TMS DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.999
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 8.261

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 6 IN MANDAYS/YR

STS OPERATIONS	4.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 7
NUMBER OF FLIGHTS: 19 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 19 FLIGHTS: 28.098
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 61.191

EVA CRANE OP 47.880

EVA SERVICE TECH 47.880

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 7 IN MANDAYS/YR

STS OPERATIONS	28.1
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 8
NUMBER OF FLIGHTS: 15 PRIME MISSION: GLASSPROC OPTICA LFIBERS RESUPP OUTCOME # IS 0 KEY IS CM08
INCLINATION IS 29.00
CODE IS SPCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 15 FLIGHTS: 22.182
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 48.308

EVA CRANE OP 37.800

EVA SERVICE TECH 37.800

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.070
TEST & C/O = 0.486
MODULE MATE = 0.152

ADJUSTED DUR FOR 15 FLIGHTS, AT SPACE STATION 30.366
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 13.205

S/C SYS - ELEC 10.049

S/C SYS - MECH 10.049

S/C SYS - FLUIDS 7 654

SP STA SYS OPS 60.732

EVA CRANE OP 30.114

EVA SERVICE TECH 25.704

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 8 IN MANDAYS/YR

STS OPERATIONS	22.2
CONSTRUCTION OPERATIONS	30.4
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 9
NUMBER OF FLIGHTS: 1 PRIME MISSION: GLASS PROC PLANT OUTCOME # IS 0 KEY IS CM07
INCLINATION IS 29.00
CODE IS SPCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 1.479
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	3.221
EVA CRANE OP	2.520
EVA SERVICE TECH	2.520

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.558
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	0.816
S/C SYS - ELEC	0.510
S/C SYS - MECH	0.510
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	3.116
EVA CRANE OP	1.075
EVA SERVICE TECH	1.075

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 9 IN MANDAYS/YR

STS OPERATIONS	1.5
CONSTRUCTION OPERATIONS	1.6
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 10
NUMBER OF FLIGHTS: 8 PRIME MISSION: LOW INCL STA RESUPPLY OUTCOME # IS 0 KEY IS OT02
INCLINATION IS 29.00
CODE IS SORS

SHUTTLE OPERATIONS

```
 UNADJUSTED DURATIONS
ORBITER ARRIVE    =  0.0832
ORBITER OFFLOAD   =  0.6000
ORBITER RELOAD    =  0.6000
ORBITER DEPART    =  0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF   8 FLIGHTS:  21.911
STS OPERATIONS   MISSION RESULTS
CREW SKILL        MANDAYS

SP STA SYS OPS      45.924

EVA CRANE OP        40.320

EVA SERVICE TECH    40.320

                          CONSTRUCTION OPERATIONS


                ***DURATION SUMMARY FORFIRST          MISSION FLIGHT NO.   10 IN MANDAYS/YR***

    STS OPERATIONS              21.9
    CONSTRUCTION OPERATIONS      0.0
    OTV OPERATIONS               0.0
    OTV MISSIONS                 0.0

TYPE #1 =    4 TYPE #2 =    0

***>> FLIGHT NO.  11
  NUMBER OF FLIGHTS:   2 PRIME MISSION: HI-INCL STATION   RESUPPLY        OUTCOME # IS    0 KEY IS OT04
 INCLINATION IS    98.00
CODE IS SORS

                          SHUTTLE OPERATIONS

 UNADJUSTED DURATIONS
ORBITER ARRIVE    =  0.0832
ORBITER OFFLOAD   =  0.6000
ORBITER RELOAD    =  0.6000
ORBITER DEPART    =  0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF   2 FLIGHTS:   5.478
STS OPERATIONS   MISSION RESULTS
CREW SKILL        MANDAYS

SP STA SYS OPS      11.481

EVA CRANE OP        10.080

EVA SERVICE TECH    10.080

                          CONSTRUCTION OPERATIONS


                ***DURATION SUMMARY FORFIRST          MISSION FLIGHT NO.   11 IN MANDAYS/YR***

    STS OPERATIONS              5.5
    CONSTRUCTION OPERATIONS     0.0
```

OTV OPERATIONS	0.0
OTV MISSIONS	0.0

PAYLOADS SERVICING ANALYSIS

PAYLOAD WITH KEY S001 EARTH OBSERV PALLET

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 150.000

UPDATED WORK DURATION AT SP STA 150.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.000
EARTH, OCEAN OBS	150.000
S/C SYS - ELEC	7.500
S/C SYS - FLUIDS	7.500
SP STA SYS OPS	7.500

DURATION SUMMARY FOR PAYLOAD NO. 1 S001 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	150.0

PAYLOAD WITH KEY S002 SYNTH APERTURE RADAR

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 5.000

UPDATED WORK DURATION AT SP STA 5.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	0.500
EARTH, OCEAN OBS	5.000
S/C SYS - ELEC	0.250
S/C SYS - FLUIDS	0.250

SP STA SYS OPS 0.250

DURATION SUMMARY FOR PAYLOAD NO. 2 S002 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 5.0

PAYLOAD WITH KEY S003 HETERODYNING CO2 LIDAR

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 5.000

UPDATED WORK DURATION AT SP STA 5.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 0.500

EARTH, OCEAN OBS 5.000

S/C SYS - ELEC 0.250

S/C SYS - FLUIDS 0.250

SP STA SYS OPS 0.250

DURATION SUMMARY FOR PAYLOAD NO. 3 S003 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 5.0

PAYLOAD WITH KEY S004 UPPER ATMOS RESEARCH PKG

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 145.000

UPDATED WORK DURATION AT SP STA 145.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	14.500
EARTH, OCEAN OBS	145.000
S/C SYS - ELEC	7.250
S/C SYS - FLUIDS	7.250
SP STA SYS OPS	7.250

DURATION SUMMARY FOR PAYLOAD NO. 4 S004 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	145.0

PAYLOAD WITH KEY OT03 SPACE STATION MODULES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 5 OT03 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	67.200
SP STA SYS OPS	470.400
EVA CRANE OP	67.200
EVA SERVICE TECH	67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 5 OT03 IN MANDAYS/YR

SERVICING OPERATIONS	336.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY OT04 HI-INCL STATION RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 6 OT04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SP02 SPACE PHYSICS PALLET

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
PHYSICS SCIENCE = 54.000

UPDATED WORK DURATION AT SP STA 54.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 5.400

PHYS SCI RESEARC 54.000

S/C SYS - ELEC 2.700

S/C SYS - FLUIDS 2.700

SP STA SYS OPS 2.700

DURATION SUMMARY FOR PAYLOAD NO. 8 SP02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 54.0

PAYLOAD WITH KEY SA01 VLBI/COSMIC RAY PKG

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 67.000

UPDATED WORK DURATION AT SP STA 67.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	6.700
ASTROPHSICS	67.000
S/C SYS - ELEC	3.350
S/C SYS - FLUIDS	3.350
SP STA SYS OPS	3.350

DURATION SUMMARY FOR PAYLOAD NO. 9 SA01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	67.0

PAYLOAD WITH KEY SL08 RAD BIOLOGY IN SM MAMMALS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

LIFE SCIENCE = 30.000

UPDATED WORK DURATION AT SP STA 30.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	3.000
MED/BIO RESEARCH	30.000
S/C SYS - ELEC	1.500
S/C SYS - FLUIDS	1.500
SP STA SYS OPS	1.500

DURATION SUMMARY FOR PAYLOAD NO. 10 SL08 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	30.0

PAYLOAD WITH KEY SL04 LIFESCIENCES RES FAC

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 191.000

UPDATED WORK DURATION AT SP STA 191.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	19.100
MED/BIO RESEARCH	191.000
S/C SYS - ELEC	9.550
S/C SYS - FLUIDS	9.550
SP STA SYS OPS	9.550

DURATION SUMMARY FOR PAYLOAD NO. 14 SL04 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	191.0

PAYLOAD WITH KEY SL05 CENTRIFUGE (ADD TO LSRF)

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 91.000

UPDATED WORK DURATION AT SP STA 91.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	9.100
MED/BIO RESEARCH	91.000
S/C SYS - ELEC	4.550
S/C SYS - FLUIDS	4.550
SP STA SYS OPS	4.550

DURATION SUMMARY FOR PAYLOAD NO. 15 SL05 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	91.0

PAYLOAD WITH KEY SL06 CLOSED ENV LSS EXPT MOD

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 547.500

UPDATED WORK DURATION AT SP STA 547.5 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	54.750
MED/BIO RESEARCH	547.500
S/C SYS - ELEC	27.375
S/C SYS - FLUIDS	27.375
SP STA SYS OPS	27.375

DURATION SUMMARY FOR PAYLOAD NO. 16 SL06 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	547.5

PAYLOAD WITH KEY CM01 MATLS SCIENCE LAB

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 300.000

UPDATED WORK DURATION AT SP STA 300.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 17 CM01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	300.0

PAYLOAD WITH KEY CM02 CRYSTAL GROWTH FACTORY/PLAT

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	36.000
TEST & C/O	=	1.944
TMS LAUNCH	=	0.328
TMS OPS	=	12.000
TMS CREW OPS	=	12.000
TMS CAPTURE/BRTH	=	0.168
TMS MAINT/REFUEL	=	4.400
CREW MOD MAINT	=	6.840

ADJUSTED SERVICING TIME FOR 18 CM02 154.7 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	61.471
S/C SYS - DATA	126.739
S/C SYS - ELEC	54.818
S/C SYS - MECH	125.800
S/C SYS - FLUIDS	44.206
SP STA SYS OPS	143.136
EVA SERVICE TECH	56.952
TMS PILOT	254.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 18 CM02 IN MANDAYS/YR

SERVICING OPERATIONS	154.7
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM03 CRYSTAL GROWTH RESUP-1

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	12.000
TEST & C/O	=	1.458
TMS LAUNCH	=	0.246
TMS OPS	=	9.000
TMS CREW OPS	=	9.000
TMS CAPTURE/BRTH	=	0.126
TMS MAINT/REFUEL	=	3.300
CREW MOD MAINT	=	5.130

ADJUSTED SERVICING TIME FOR 19 CM03 84.5 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	30.353

S/C SYS - DATA	79.304
S/C SYS - ELEC	25.364
S/C SYS - MECH	78.600
S/C SYS - FLUIDS	17.404
SP STA SYS OPS	75.852
EVA SERVICE TECH	42.714
TMS PILOT	127.562

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 19 CM03 IN MANDAYS/YR

SERVICING OPERATIONS	84.5
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM04 CRYSTAL GROWTH RESUP-2

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	16.000
TEST & C/O	=	1.944
TMS LAUNCH	=	0.328
TMS OPS	=	12.000
TMS CREW OPS	=	12.000
TMS CAPTURE/BRTH	=	0.168
TMS MAINT/REFUEL	=	4.400
CREW MOD MAINT	=	6.840

ADJUSTED SERVICING TIME FOR 20 CM04 112.7 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	40.471
S/C SYS - DATA	105.739
S/C SYS - ELEC	33.818
S/C SYS - MECH	104.800
S/C SYS - FLUIDS	23.206
SP STA SYS OPS	101.136
EVA SERVICE TECH	56.952
TMS PILOT	170.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 20 CM04 IN MANDAYS/YR

SERVICING OPERATIONS	112.7
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY SA03 ASTROPHYSICS FREE-FLYER

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	2.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 22 SA03 30.1 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	11.078
S/C SYS - DATA	36.574
S/C SYS - ELEC	6.355
S/C SYS - MECH	25.324
S/C SYS - FLUIDS	4.313
SP STA SYS OPS	33.323
EVA SERVICE TECH	14.238
TMS PILOT	34.121

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 22 SA03 IN MANDAYS/YR

SERVICING OPERATIONS	30.1
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY SA04 ASTROPHYSICS OBSERVATORIES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	6.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 23 SA04 38.5 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.278
S/C SYS - DATA	40.774
S/C SYS - ELEC	10.555
S/C SYS - MECH	29.524
S/C SYS - FLUIDS	8.515
SP STA SYS OPS	41.723
EVA SERVICE TECH	14.238
TMS PILOT	50.921

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 23 SA04 IN MANDAYS/YR

SERVICING OPERATIONS	38.5
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CC03 INTELSAT-7,7A CLASS COMSAT

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 26 CC03 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CC04 MULTIBEAM COMM. SATELLITE

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 27 CC04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC05 RECONFIGURABLE COMM. SATELLITE

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 28 CC05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM05 CONT FLOW ELEC- TROPH PLATFORM

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

ADJUSTED SERVICING TIME FOR 29 CM05 0.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 29 CM05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM06 CONTINUOUS FLOW ELECTRO RESUPP

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	48.000
TEST & C/O	=	1.944
TMS LAUNCH	=	0.328
TMS OPS	=	12.000
TMS CREW OPS	=	12.000
TMS CAPTURE/BRTH	=	0.168
TMS MAINT/REFUEL	=	4.400
CREW MOD MAINT	=	6.840

ADJUSTED SERVICING TIME FOR 30 CM06 179.9 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	74.071
S/C SYS - DATA	139.339
S/C SYS - ELEC	67.418
S/C SYS - MECH	138.400
S/C SYS - FLUIDS	56.806
SP STA SYS OPS	168.336
EVA SERVICE TECH	56.952
TMS PILOT	304.483

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 30 CM06 IN MANDAYS/YR

SERVICING OPERATIONS	179.9
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM07 GLASS PROC PLANT

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	50.000

UPDATED WORK DURATION AT SP STA 50.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 31 CM07 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 50.0

PAYLOAD WITH KEY CM08 GLASSPROC OPTICA LFIBERS RESUPP

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 8.000

UPDATED WORK DURATION AT SP STA 8.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 32 CM08 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 8.0

PAYLOAD WITH KEY OT01 LOW INCL STA MODULE DEL

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 33 OT01 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 67.200

SP STA SYS OPS 470.400

EVA CRANE OP 67.200

EVA SERVICE TECH 67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 33 OT01 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT02 LOW INCL STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 34 OT02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT05 HI-ALT STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 35 OT05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY TS02 TECH DEVEL CARRY-ONS

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 20.000

UPDATED WORK DURATION AT SP STA 20.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 4.000

ENGINEERING	20.000
S/C SYS - DATA	3.000
S/C SYS - ELEC	1.000
S/C SYS - MECH	1.000
S/C SYS - FLUIDS	4.000
SP STA SYS OPS	2.000
EVA CRANE OP	1.000
EVA SERVICE TECH	1.000
MANNED OTV PILOT	3.000

DURATION SUMMARY FOR PAYLOAD NO. 45 TS02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	20.0

PAYLOAD WITH KEY SA05 LARGE RADIO TELESCOPE

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	10.000
TEST & C/O	=	10.100
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 46 SA05 61.0 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	26.512
S/C SYS - DATA	73.114
S/C SYS - ELEC	14.755
S/C SYS - MECH	36.538
S/C SYS - FLUIDS	14.120
SP STA SYS OPS	78.263
EVA SERVICE TECH	14.238
TMS PILOT	67.721

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 46 SA05 IN MANDAYS/YR

SERVICING OPERATIONS	61.0
SCIENCE & TECH DEMO	0.0

SKILL MIX SUMMARIES LOW INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	52.9	83.0	0.0	0.0	206.4	0.0	0.0	0.0	0.0	4.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	829.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	150.5	0.0	0.0	83.9	451.1	0.0	67.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	31.7	41.5	0.0	97.0	181.4	0.0	45.5	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	91.4	0.0	0.0	86.8	447.6	0.0	45.5	0.0	0.0	1.0	0.0	0.0	0.9	0.0	0.0
S/C SYS - FLUIDS	0.0	26.9	41.5	0.0	79.3	141.6	0.0	41.3	0.0	0.0	1.0	0.0	0.0	0.6	0.0	0.0
SP STA SYS OPS	0.0	153.3	41.5	0.0	190.1	488.5	0.0	255.8	0.0	0.0	4.0	0.0	23.2	0.0	0.0	0.0
EVA CRANE OP	0.0	0.0	0.0	0.0	155.1	0.0	0.0	90.5	0.0	0.0	2.0	0.0	147.0	470.4	0.0	0.0
EVA SERVICE TECH	0.0	42.7	0.0	0.0	198.6	213.6	0.0	79.0	0.0	0.0	1.0	0.0	80.6	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	136.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	80.6	67.2	0.0	0.0
TMS PILOT	0.0	152.8	0.0	0.0	0.0	856.2	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
1739.	4639.	40.	1004.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	413.4
MED/BIO RESEARCH	829.5
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	0.0
ENGINEERING	20.0
ASTROPHSICS	0.0
S/C SYS - DATA	756.3
S/C SYS - ELEC	398.1
S/C SYS - MECH	672.4
S/C SYS - FLUIDS	357.9
SP STA SYS OPS	1748.5
EVA CRANE OP	394.5
EVA SERVICE TECH	682.8
MANNED OTV PILOT	139.0
TMS PILOT	1009.0
MATLS SCIENCE	0.0

ORIGINAL PAGE IS
OF POOR QUALITY

TOTAL SPACE STATION CREW: 20.3 PEOPLE

SKILL MIX SUMMARIES HIGH INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	0.0	45.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	54.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	305.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	67.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	0.0	22.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	0.0	22.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SP STA SYS OPS	0.0	0.0	22.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.5	470.4	0.0	0.0
EVA CRANE OP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
EVA SERVICE TECH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
570.	0.	0.	704.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	112.8
MED/BIO RESEARCH	30.0
PHYS SCI RESEARC	54.0
EARTH, OCEAN OBS	305.0
ENGINEERING	0.0
ASTROPHSICS	67.0
S/C SYS - DATA	0.0
S/C SYS - ELEC	22.8
S/C SYS - MECH	0.0
S/C SYS - FLUIDS	22.8
SP STA SYS OPS	504.7
EVA CRANE OP	77.3
EVA SERVICE TECH	77.3
MANNED OTV PILOT	0.0
TMS PILOT	0.0
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 3.5 PEOPLE

LOW INCLINATION

DURATION SUMMARY FOR YEAR 2003 IN MANDAYS/YR

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STS OPERATIONS	107.8
CONSTRUCTION	127.9
OTV OPERATIONS	94.5
OTV MISSIONS	67.2
SERVICING OPERATIONS	997.5
SCIENCE & TECH DEMO	1207.5

HIGH INCLINATION

DURATION SUMMARY FOR YEAR 2003 IN MANDAYS/YR

STS OPERATIONS	5.5
CONSTRUCTION	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0
SERVICING OPERATIONS	336.0
SCIENCE & TECH DEMO	456.0

SUMMARY OF SPACE STATION PAYLOADS THIS YEAR

KEY	TITLE	PLCODE	INCL	PK POWER	DUTY CYCLE
S001	EARTH OBSERV PALLET	SPCL	98.0	3.5	82.2
S002	SYNTH APERTURE RADAR	SPCL	98.0	10.0	2.7
S003	HETERODYNING CO2 LIDAR	SPXX	98.0	1.0	13.7
S004	UPPER ATMOS RESEARCH PKG	SPCL	98.0	2.2	54.8
OT03	SPACE STATION MODULES	SSSS	98.0	15.0	100.0
OT04	HI-INCL STATION RESUPPLY	SORS	98.0	1.0	100.0
SP02	SPACE PHYSICS PALLET	SPCM	98.0	10.0	9.9
SA01	VLBI/COSMIC RAY PKG	SPCL	98.0	2.0	100.0
SL08	RAD BIOLOGY IN SM MAMMALS	SSSA	98.0	0.6	100.0
SL04	LIFESCIENCES RES FAC	SPXX	29.0	12.2	100.0
SL05	CENTRIFUGE (ADD TO LSRF)	SSCL	29.0	4.0	100.0
SL06	CLOSED ENV LSS EXPT MOD	SPCL	29.0	9.7	100.0

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CM01	MATLS SCIENCE LAB	SPXX	29.0	25.0	35.6
CM02	CRYSTAL GROWTH FACTORY/PLAT	PMCL	29.0	0.0	100.0
CM03	CRYSTAL GROWTH RESUP-1	PMXX	29.0	0.0	0.5
CM04	CRYSTAL GROWTH RESUP-2	PMCL	29.0	0.0	0.5
SA03	ASTROPHYSICS FREE-FLYER	FMXM	29.0	0.0	100.0
SA04	ASTROPHYSICS OBSERVATORIES	FMXM	29.0	1.0	100.0
CC03	INTELSAT-7,7A CLASS COMSAT	FXCL	0.0	0.0	0.0
CC04	MULTIBEAM COMM. SATELLITE	SSCM	0.0	0.0	0.0
CC05	RECONFIGURABLE COMM. SATELLITE	FXCM	0.0	0.0	1.9
CM05	CONT FLOW ELEC-TROPH PLATFORM	PMCL	29.0	0.0	100.0
CM06	CONTINUOUS FLOW ELECTRO RESUPP	PMXL	29.0	2.0	0.0
CM07	GLASS PROC PLANT	SPCL	29.0	10.6	100.0
CM08	GLASSPROC OPTICA LFIBERS RESUPP	SPCL	29.0	0.0	0.0
OT01	LOW INCL STA MODULE DEL	SSSS	29.0	20.0	100.0
OT02	LOW INCL STA RESUPPLY	SORS	29.0	0.0	100.0
OT05	HI-ALT STA RESUPPLY	OMSB	29.0	0.0	100.0
TS02	TECH DEVEL CARRY-ONS	SSSA	29.0	0.5	6.8
SA05	LARGE RADIO TELESCOPE	FMCH	29.0	0.0	100.0

LOW INCLINATION

PEAK POWER AVERAGE POWER

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85.0 66.4

HIGH INCLINATION

PEAK POWER AVERAGE POWER

45.3 24.1

RESOURCES SUMMARY FOR LOW INCLINATION SPACE STATION

INTERNAL VOLUME	2.0	CUBIC METERS
POWER	66.4	KW
NO. OF PORTS	5.	

RESOURCES SUMMARY FOR HIGH INCLINATION SPACE STATION

INTERNAL VOLUME	8.8	CUBIC METERS
POWER	24.1	KW
NO. OF PORTS	6.	

POINTING & DISTURBANCE SUMMARY FOR LOW INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350
CM01						----------									
CM02	----------														
CM03								-							
CM04								-							
SA03	----------														
SA04	----------														
CC03								-							
CC04								-							
CC05								-							
CM05	----------														
CM06								-							
CM07	----------														
CM08								-							
OT01	----------														
OT02	----------														
OT05	----------														
TS02							-----								
SA05	----------														

POINTING & DISTURBANCE SUMMARY FOR HIGH INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

```
                                1   1   1   1   2   2   2   2   3   3   3
      2   5   7   1   1   1   0   2   5   7   0   2   5   7   0   2   5
  0   5   0   5   0   2   5   0   5   0   5   0   5   0   5   0   5   0
S001 0000000000000000000000000000000000000000000000000000000000000000000
S002 00
S003 0000000000
S004 00000000000000000000000000000000000000000
OT03 ---------------------------------------------------------------------
OT04 ---------------------------------------------------------------------
SP02 0000000
SA01 ***************************************************************************
SL08 ---------------------------------------------------------------------
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* * * SPACE STATION OPERATIONS ANALYSIS FOR YEAR 2004 * * *

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 1
NUMBER OF FLIGHTS: 1 PRIME MISSION: **MULTIBEAM COMM SATELLITE OUTCOME # IS 0 KEY IS CC04
INCLINATION IS 0.00
CODE IS SSCM
SECOND MISSION: TMS PROP DELIV OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - FLUIDS	1.661
SP STA SYS OPS	10.075
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 8.756AWAY 4.200
FIRST MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - DATA	6.987
S/C SYS - ELEC	9.160
S/C SYS - MECH	7.470
S/C SYS - FLUIDS	7.879
SP STA SYS OPS	16.972
EVA CRANE OP	8.636

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EVA SERVICE TECH 15.881

MANNED OTV PILOT 8.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.993
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.700
TEST & C/O = 3.400
MODULE MATE = 0.152
FAB STRUCT = 0.246

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 11.650
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 5.776

S/C SYS - ELEC 3.730

S/C SYS - MECH 3.730

S/C SYS - FLUIDS 3.570

SP STA SYS OPS 23.299

EVA CRANE OP 8.502

EVA SERVICE TECH 5.562

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DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	11.6
OTV OPERATIONS	8.8
OTV MISSIONS	4.2

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 2
NUMBER OF FLIGHTS: 2 PRIME MISSION: **INTELSAT-7,7A CLASS COMSAT OUTCOME # IS 0 KEY IS CC03
INCLINATION IS 0.00
CODE IS FXCL
SECOND MISSION: TMS CAB DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 7.823

STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS	3.322
SP STA SYS OPS	20.149
EVA CRANE OP	15.120
EVA SERVICE TECH	15.120

OTV OPERATIONS

UNADJUSTED DURATIONS

MAINTAIN STAGE	=	1.150
MATE TO PAYLD	=	0.131
STAGE/STAGE MATE	=	0.210
OTV/PLD C/O	=	0.555
LAUNCH	=	0.082
CAPTURE	=	0.042
MISSION OPS	=	2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 2 FLIGHTS:
AT SPACE STA 17.512AWAY 8.400

FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	13.973
S/C SYS - ELEC	18.320
S/C SYS - MECH	14.939
S/C SYS - FLUIDS	15.758
SP STA SYS OPS	33.945
EVA CRANE OP	17.272
EVA SERVICE TECH	31.762
MANNED OTV PILOT	17.319

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.200
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.280
TEST & C/O	=	0.486

ADJUSTED DUR FOR 2 FLIGHTS, AT SPACE STATION 4.292

FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	1.633
S/C SYS - ELEC	1.021

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S/C SYS - MECH	1.021
S/C SYS - FLUIDS	1.021
SP STA SYS OPS	8.585
EVA CRANE OP	4.502
EVA SERVICE TECH	2.150

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS	7.8
CONSTRUCTION OPERATIONS	4.3
OTV OPERATIONS	17.5
OTV MISSIONS	8.4

TYPE #1 = 2 TYPE #2 = 2

***>> FLIGHT NO. 3
NUMBER OF FLIGHTS: 4 PRIME MISSION: **RECONFIGURABLE COMM. SATELLI OUTCOME # IS 0 KEY IS CC05
INCLINATION IS 0.00
CODE IS FXCM
SECOND MISSION: CRYSTAL GROWTH RESUP-2 OUTCOME # IS 0
KEY IS CM04
CODE IS PMCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS

ORBITER ARRIVE	=	0.0416
ORBITER OFFLOAD	=	0.6000
ORBITER OFFLOAD	=	0.6000 (MISSION 2)
ORBITER DEPART	=	0.0210
ORBITER PROP XFR	=	0.3629

ADJ STS DURATION AT SP STA FOR TOTAL OF 4 FLIGHTS: 10.606

STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - FLUIDS	6.097
SP STA SYS OPS	29.536
EVA CRANE OP	20.160
EVA SERVICE TECH	20.160

OTV OPERATIONS

UNADJUSTED DURATIONS

MAINTAIN STAGE	=	1.150
MATE TO PAYLD	=	0.131
STAGE/STAGE MATE	=	0.210
OTV/PLD C/O	=	0.555
LAUNCH	=	0.082
CAPTURE	=	0.042
MISSION OPS	=	7.000

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ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 4 FLIGHTS:
AT SPACE STA 77.025AWAY 58.800

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	69.947
S/C SYS - ELEC	78.641
S/C SYS - MECH	71.879
S/C SYS - FLUIDS	72.970
SP STA SYS OPS	57.127
EVA CRANE OP	24.464
EVA SERVICE TECH	53.444
MANNED OTV PILOT	118.638

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.140
TEST & C/O	=	3.400
MODULE MATE	=	0.152

ADJUSTED DUR FOR 4 FLIGHTS, AT SPACE STATION 39.824

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	23.103
S/C SYS - ELEC	14.918
S/C SYS - MECH	14.918
S/C SYS - FLUIDS	14.280
SP STA SYS OPS	79.649
EVA CRANE OP	22.529
EVA SERVICE TECH	20.177

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 3 IN MANDAYS/YR

STS OPERATIONS	10.6
CONSTRUCTION OPERATIONS	39.8
OTV OPERATIONS	77.0
OTV MISSIONS	58.8

UNADJUSTED DURATIONS

SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 4 FLIGHTS, AT SPACE STATION 46.696
SECOND MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	26.497
S/C SYS - ELEC	17.279
S/C SYS - MECH	17.279
S/C SYS - FLUIDS	16.321
SP STA SYS OPS	93.391
EVA CRANE OP	28.106
EVA SERVICE TECH	25.754

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 3 IN MANDAYS/YR

STS OPERATIONS	10.6
CONSTRUCTION OPERATIONS	46.7
OTV OPERATIONS	77.0
OTV MISSIONS	58.8

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 4
NUMBER OF FLIGHTS: 1 PRIME MISSION: **CRYSTAL GROWTH RESUP-2 OUTCOME # IS 0 KEY IS CM04
INCLINATION IS 29.00
CODE IS PMCL
SECOND MISSION: TMS PROP DELIV OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3304
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS	1.388
SP STA SYS OPS	9.733
EVA CRANE OP	7.560
EVA SERVICE TECH	7.560

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CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.718

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	0.848
S/C SYS - ELEC	0.590
S/C SYS - MECH	0.590
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	3.436
EVA CRANE OP	1.394
EVA SERVICE TECH	1.394

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 4 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 5
NUMBER OF FLIGHTS: 1 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL
SECOND MISSION: TMS DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.999

STS OPERATIONS CREW SKILL	MISSION RESULTS MANDAYS
SP STA SYS OPS	8.261
EVA CRANE OP	7.560

EVA SERVICE TECH 7.560

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 5 IN MANDAYS/YR

STS OPERATIONS	4.0
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 2

***>> FLIGHT NO. 6
NUMBER OF FLIGHTS: 1 PRIME MISSION: LOW INCL STA RESUPPLY OUTCOME # IS 0 KEY IS OT02
INCLINATION IS 29.00
CODE IS SORS
SECOND MISSION: CRYSTAL GROWTH RESUP-2 OUTCOME # IS 0
KEY IS CM04
CODE IS PMCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 7.998

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 6 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.718
SECOND MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	0.848
S/C SYS - ELEC	0.590
S/C SYS - MECH	0.590
S/C SYS - FLUIDS	0.510
SP STA SYS OPS	3.436
EVA CRANE OP	1.394
EVA SERVICE TECH	1.394

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 6 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	1.7
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 7
NUMBER OF FLIGHTS: 19 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 19 FLIGHTS: 28.098
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	61.191
EVA CRANE OP	47.880
EVA SERVICE TECH	47.880

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 7 IN MANDAYS/YR

STS OPERATIONS	28.1
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0

OTV MISSIONS 0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 8
NUMBER OF FLIGHTS: 15 PRIME MISSION: GLASSPROC OPTICA LFIBERS RESUPP OUTCOME # IS 0 KEY IS CM08
INCLINATION IS 29.00
CODE IS SPCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 15 FLIGHTS: 22.182
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	48.308
EVA CRANE OP	37.800
EVA SERVICE TECH	37.800

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.070
TEST & C/O = 0.486
MODULE MATE = 0.152

ADJUSTED DUR FOR 15 FLIGHTS, AT SPACE STATION 30.366
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	13.205
S/C SYS - ELEC	10.049
S/C SYS - MECH	10.049
S/C SYS - FLUIDS	7.654
SP STA SYS OPS	60.732
EVA CRANE OP	30.114
EVA SERVICE TECH	25.704

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 8 IN MANDAYS/YR

STS OPERATIONS	22.2
CONSTRUCTION OPERATIONS	30.4
OTV OPERATIONS	0.0

OTV MISSIONS 0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 9
NUMBER OF FLIGHTS: 7 PRIME MISSION: LOW INCL STA RESUPPLY OUTCOME # IS 0 KEY IS OT02
INCLINATION IS 29.00
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 7 FLIGHTS: 19.172
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 40.184

EVA CRANE OP 35.280

EVA SERVICE TECH 35.280

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 9 IN MANDAYS/YR

STS OPERATIONS	19.2
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 10
NUMBER OF FLIGHTS: 2 PRIME MISSION: HI-INCL STATION RESUPPLY OUTCOME # IS 0 KEY IS OT04
INCLINATION IS 98.00
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 5.478
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 11.481

EVA CRANE OP 10.080

EVA SERVICE TECH 10.080

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 10 IN MANDAYS/YR

STS OPERATIONS	5.5
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

PAYLOADS SERVICING ANALYSIS

PAYLOAD WITH KEY S001 EARTH OBSERV PALLET

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 150.000

UPDATED WORK DURATION AT SP STA 150.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 15.000

EARTH, OCEAN OBS 150.000

S/C SYS - ELEC 7.500

S/C SYS - FLUIDS 7.500

SP STA SYS OPS 7.500

DURATION SUMMARY FOR PAYLOAD NO. 1 S001 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 150.0

PAYLOAD WITH KEY S002 SYNTH APERTURE RADAR

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 5.000

UPDATED WORK DURATION AT SP STA 5.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 0.500

EARTH, OCEAN OBS 5.000

S/C SYS - ELEC 0.250

S/C SYS - FLUIDS 0.250

SP STA SYS OPS 0.250

DURATION SUMMARY FOR PAYLOAD NO. 2 S002 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 5.0

PAYLOAD WITH KEY S003 HETERODYNING CO2 LIDAR

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 5.000

UPDATED WORK DURATION AT SP STA 5.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 0.500

EARTH, OCEAN OBS 5.000

S/C SYS - ELEC 0.250

S/C SYS - FLUIDS 0.250

SP STA SYS OPS 0.250

DURATION SUMMARY FOR PAYLOAD NO. 3 S003 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 5.0

PAYLOAD WITH KEY S004 UPPER ATMOS RESEARCH PKG

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 145.000

UPDATED WORK DURATION AT SP STA 145.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	14.500
EARTH, OCEAN OBS	145.000
S/C SYS - ELEC	7.250
S/C SYS - FLUIDS	7.250
SP STA SYS OPS	7.250

DURATION SUMMARY FOR PAYLOAD NO. 4 S004 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	145.0

PAYLOAD WITH KEY OT03 SPACE STATION MODULES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 5 OT03 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	67.200
SP STA SYS OPS	470.400
EVA CRANE OP	67.200
EVA SERVICE TECH	67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 5 OT03 IN MANDAYS/YR

SERVICING OPERATIONS	336.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY OT04 HI-INCL STATION RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 6 OT04 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY SP02 SPACE PHYSICS PALLET

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
PHYSICS SCIENCE = 54.000

UPDATED WORK DURATION AT SP STA 54.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	5.400
PHYS SCI RESEARC	54.000
S/C SYS - ELEC	2.700
S/C SYS - FLUIDS	2.700
SP STA SYS OPS	2.700

DURATION SUMMARY FOR PAYLOAD NO. 8 SP02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	54.0

PAYLOAD WITH KEY SA01 VLBI/COSMIC RAY PKG

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 67.000

UPDATED WORK DURATION AT SP STA 67.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

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NO SPECIAL SKILL	6.700
ASTROPHSICS	67.000
S/C SYS - ELEC	3.350
S/C SYS - FLUIDS	3.350
SP STA SYS OPS	3.350

DURATION SUMMARY FOR PAYLOAD NO. 9 SA01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	67.0

PAYLOAD WITH KEY SL08 RAD BIOLOGY IN SM MAMMALS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

LIFE SCIENCE = 30.000

UPDATED WORK DURATION AT SP STA 30.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	3.000
MED/BIO RESEARCH	30.000
S/C SYS - ELEC	1.500
S/C SYS - FLUIDS	1.500
SP STA SYS OPS	1.500

DURATION SUMMARY FOR PAYLOAD NO. 10 SL08 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	30.0

PAYLOAD WITH KEY SL04 LIFESCIENCES RES FAC

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 191.000

UPDATED WORK DURATION AT SP STA 191.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 19.100

MED/BIO RESEARCH 191.000

S/C SYS - ELEC 9.550

S/C SYS - FLUIDS 9.550

SP STA SYS OPS 9.550

DURATION SUMMARY FOR PAYLOAD NO. 14 SL04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 191.0

PAYLOAD WITH KEY SL05 CENTRIFUGE (ADD TO LSRF)

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 91.000

UPDATED WORK DURATION AT SP STA 91.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 9.100

MED/BIO RESEARCH 91.000

S/C SYS - ELEC 4.550

S/C SYS - FLUIDS 4.550

SP STA SYS OPS 4.550

DURATION SUMMARY FOR PAYLOAD NO. 15 SL05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 91.0

PAYLOAD WITH KEY SL06 CLOSED ENV LSS EXPT MOD

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 547.500

UPDATED WORK DURATION AT SP STA 547.5 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	54.750
MED/BIO RESEARCH	547.500
S/C SYS - ELEC	27.375
S/C SYS - FLUIDS	27.375
SP STA SYS OPS	27.375

DURATION SUMMARY FOR PAYLOAD NO. 16 SL06 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	547.5

PAYLOAD WITH KEY CM01 MATLS SCIENCE LAB

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 300.000

UPDATED WORK DURATION AT SP STA 300.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 17 CM01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	300.0

PAYLOAD WITH KEY CM02 CRYSTAL GROWTH FACTORY/PLAT

SATELLITE SERVICING OPERATIONS

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UNADJUSTED DURATIONS

REMOTE SERVICE	=	36.000
TEST & C/O	=	1.944
TMS LAUNCH	=	0.328
TMS OPS	=	12.000
TMS CREW OPS	=	12.000
TMS CAPTURE/BRTH	=	0.168
TMS MAINT/REFUEL	=	4.400
CREW MOD MAINT	=	6.840

ADJUSTED SERVICING TIME FOR 18 CM02 154.7 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	61.471
S/C SYS - DATA	126.739
S/C SYS - ELEC	54.818
S/C SYS - MECH	125.800
S/C SYS - FLUIDS	44.206
SP STA SYS OPS	143.136
EVA SERVICE TECH	56.952
TMS PILOT	254.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 18 CM02 IN MANDAYS/YR

SERVICING OPERATIONS	154.7
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM03 CRYSTAL GROWTH RESUP-1

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	12.000
TEST & C/O	=	1.458
TMS LAUNCH	=	0.246
TMS OPS	=	9.000
TMS CREW OPS	=	9.000
TMS CAPTURE/BRTH	=	0.126
TMS MAINT/REFUEL	=	3.300
CREW MOD MAINT	=	5.130

ADJUSTED SERVICING TIME FOR 19 CM03 84.5 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	30.353

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S/C SYS - DATA	79.304
S/C SYS - ELEC	25.364
S/C SYS - MECH	78.600
S/C SYS - FLUIDS	17.404
SP STA SYS OPS	75.852
EVA SERVICE TECH	42.714
TMS PILOT	127.562

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 19 CM03 IN MANDAYS/YR

SERVICING OPERATIONS	84.5
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM04 CRYSTAL GROWTH RESUP-2

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	16.000
TEST & C/O	=	1.944
TMS LAUNCH	=	0.328
TMS OPS	=	12.000
TMS CREW OPS	=	12.000
TMS CAPTURE/BRTH	=	0.168
TMS MAINT/REFUEL	=	4.400
CREW MOD MAINT	=	6.840

ADJUSTED SERVICING TIME FOR 20 CM04 112.7 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	40.471
S/C SYS - DATA	105.739
S/C SYS - ELEC	33.818
S/C SYS - MECH	104.800
S/C SYS - FLUIDS	23.206
SP STA SYS OPS	101.136
EVA SERVICE TECH	56.952
TMS PILOT	170.083

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OF POOR QUALITY

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 20 CM04 IN MANDAYS/YR

SERVICING OPERATIONS 112.7
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SA03 ASTROPHYSICS FREE-FLYER

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	2.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 22 SA03 30.1 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	11.078
S/C SYS - DATA	36.574
S/C SYS - ELEC	6.355
S/C SYS - MECH	25.324
S/C SYS - FLUIDS	4.313
SP STA SYS OPS	33.323
EVA SERVICE TECH	14.238
TMS PILOT	34.121

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 22 SA03 IN MANDAYS/YR

SERVICING OPERATIONS 30.1
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SA04 ASTROPHYSICS OBSERVATORIES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE = 6.000
TEST & C/O = 3.400
TMS LAUNCH = 0.082
TMS OPS = 3.000
TMS CREW OPS = 3.000
TMS CAPTURE/BRTH = 0.042
TMS MAINT/REFUEL = 1.100
CREW MOD MAINT = 1.710

ADJUSTED SERVICING TIME FOR 23 SA04 38.5 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.278
S/C SYS - DATA	40.774
S/C SYS - ELEC	10.555
S/C SYS - MECH	29.524
S/C SYS - FLUIDS	8.513
SP STA SYS OPS	41.723
EVA SERVICE TECH	14.238
TMS PILOT	50.921

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 23 SA04 IN MANDAYS/YR

SERVICING OPERATIONS 38.5
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC03 INTELSAT-7,7A CLASS COMSAT

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 26 CC03 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC04 MULTIBEAM COMM. SATELLITE

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 27 CC04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC05 RECONFIGURABLE COMM. SATELLITE

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 28 CC05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM05 CONT FLOW ELEC- TROPH PLATFORM

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

ADJUSTED SERVICING TIME FOR 29 CM05 0.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 29 CM05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM06 CONTINUOUS FLOW ELECTRO RESUPP

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 48.000
TEST & C/O = 1.944
TMS LAUNCH = 0.328
TMS OPS = 12.000
TMS CREW OPS = 12.000
TMS CAPTURE/BRTH = 0.168
TMS MAINT/REFUEL = 4.400
CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 30 CM06 179.9 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	74.071
S/C SYS - DATA	139.339
S/C SYS - ELEC	67.418
S/C SYS - MECH	138.400
S/C SYS - FLUIDS	56.806
SP STA SYS OPS	168.336
EVA SERVICE TECH	56.952
TMS PILOT	304.483

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 30 CM06 IN MANDAYS/YR

SERVICING OPERATIONS	179.9
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM07 GLASS PROC PLANT

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 50.000

UPDATED WORK DURATION AT SP STA 50.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 31 CM07 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 50.0

PAYLOAD WITH KEY CM08 GLASSPROC OPTICA LFIBERS RESUPP

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 8.000

UPDATED WORK DURATION AT SP STA 8.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 32 CM08 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 8.0

PAYLOAD WITH KEY OT01 LOW INCL STA MODULE DEL

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 33 OT01 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 67.200

SP STA SYS OPS 470.400

EVA CRANE OP 67.200

EVA SERVICE TECH 67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

ENGINEERING	20.000
S/C SYS - DATA	3.000
S/C SYS - ELEC	1.000
S/C SYS - MECH	1.000
S/C SYS - FLUIDS	4.000
SP STA SYS OPS	2.000
EVA CRANE OP	1.000
EVA SERVICE TECH	1.000
MANNED OTV PILOT	3.000

DURATION SUMMARY FOR PAYLOAD NO. 45 TS02 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	20.0

PAYLOAD WITH KEY SA05 LARGE RADIO TELESCOPE

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	10.000
TEST & C/O	=	10.100
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 46 SA05 61.0 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	26.512
S/C SYS - DATA	73.114
S/C SYS - ELEC	14.755
S/C SYS - MECH	36.538
S/C SYS - FLUIDS	14.120
SP STA SYS OPS	78.263
EVA SERVICE TECH	14.238
TMS PILOT	67.721

DURATION SUMMARY FOR PAYLOAD NO. 33 OT01 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT02 LOW INCL STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 34 OT02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT05 HI-ALT STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 35 OT05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY TS02 TECH DEVEL CARRY-ONS

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 20.000

UPDATED WORK DURATION AT SP STA 20.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 4.000

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 46 SA05 IN MANDAYS/YR

SERVICING OPERATIONS	61.0
SCIENCE & TECH DEMO	0.0

SKILL MIX SUMMARIES LOW INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	52.9	83.0	0.0	0.0	206.4	0.0	0.0	0.0	0.0	4.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	829.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	150.5	0.0	0.0	90.9	451.1	0.0	71.9	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	31.7	41.5	0.0	106.1	181.4	0.0	48.2	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	91.4	0.0	0.0	94.3	447.6	0.0	48.2	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	26.9	41.5	0.0	85.5	141.6	0.0	43.9	0.0	0.0	4.0	0.0	23.5	0.0	0.0	0.0
SP STA SYS OPS	0.0	153.3	41.5	0.0	197.0	488.5	0.0	272.5	0.0	0.0	2.0	0.0	146.5	470.4	0.0	0.0
EVA CRANE OP	0.0	0.0	0.0	0.0	156.2	0.0	0.0	96.5	0.0	0.0	1.0	0.0	80.6	67.2	0.0	0.0
EVA SERVICE TECH	0.0	42.7	0.0	0.0	206.9	213.6	0.0	82.1	0.0	0.0	1.0	0.0	80.6	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	144.6	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	152.8	0.0	0.0	0.0	856.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
1739.	4731.	40.	1003.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	413.4
MED/BIO RESEARCH	829.5
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	0.0
ENGINEERING	20.0
ASTROPHSICS	0.0
S/C SYS - DATA	767.4
S/C SYS - ELEC	409.9
S/C SYS - MECH	682.5
S/C SYS - FLUIDS	367.0
SP STA SYS OPS	1771.6
EVA CRANE OP	401.6
EVA SERVICE TECH	694.2
MANNED OTV PILOT	147.6
TMS PILOT	1009.0
MATLS SCIENCE	0.0

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TOTAL SPACE STATION CREW: 20.6 PEOPLE

SKILL MIX SUMMARIES HIGH INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	0.0	45.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	54.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	305.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	67.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	0.0	22.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	0.0	22.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SP STA SYS OPS	0.0	0.0	22.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.5	470.4	0.0	0.0
EVA CRANE OP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
EVA SERVICE TECH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
570.	0.	0.	704.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	112.8
MED/BIO RESEARCH	30.0
PHYS SCI RESEARC	54.0
EARTH, OCEAN OBS	305.0
ENGINEERING	0.0
ASTROPHSICS	67.0
S/C SYS - DATA	0.0
S/C SYS - ELEC	22.8
S/C SYS - MECH	0.0
S/C SYS - FLUIDS	22.8
SP STA SYS OPS	504.7
EVA CRANE OP	77.3
EVA SERVICE TECH	77.3
MANNED OTV PILOT	0.0
TMS PILOT	0.0
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 3.5 PEOPLE

LOW INCLINATION

DURATION SUMMARY FOR YEAR 2004 IN MANDAYS/YR

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STS OPERATIONS	103.6
CONSTRUCTION	136.3
OTV OPERATIONS	103.3
OTV MISSIONS	71.4
SERVICING OPERATIONS	997.5
SCIENCE & TECH DEMO	1207.5

HIGH INCLINATION

DURATION SUMMARY FOR YEAR 2004 IN MANDAYS/YR

STS OPERATIONS	5.5
CONSTRUCTION	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0
SERVICING OPERATIONS	336.0
SCIENCE & TECH DEMO	456.0

SUMMARY OF SPACE STATION PAYLOADS THIS YEAR

KEY	TITLE	PLCODE	INCL	PK POWER	DUTY CYCLE
S001	EARTH OBSERV PALLET	SPCL	98.0	3.5	82.2
S002	SYNTH APERTURE RADAR	SPCL	98.0	10.0	2.7
S003	HETERODYNING CO2 LIDAR	SPXX	98.0	1.0	13.7
S004	UPPER ATMOS RESEARCH PKG	SPCL	98.0	2.2	54.8
OT03	SPACE STATION MODULES	SSSS	98.0	15.0	100.0
OT04	HI-INCL STATION RESUPPLY	SORS	98.0	1.0	100.0
SP02	SPACE PHYSICS PALLET	SPCM	98.0	10.0	9.9
SA01	VLBI/COSMIC RAY PKG	SPCL	98.0	2.0	100.0
SL08	RAD BIOLOGY IN SM MAMMALS	SSSA	98.0	0.6	100.0
SL04	LIFESCIENCES RES FAC	SPXX	29.0	12.2	100.0
SL05	CENTRIFUGE (ADD TO LSRF)	SSCL	29.0	4.0	100.0
SL06	CLOSED ENV LSS EXPT MOD	SPCL	29.0	9.7	100.0

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CM01	MATLS SCIENCE LAB	SPXX	29.0	25.0	35.6
CM02	CRYSTAL GROWTH FACTORY/PLAT	PMCL	29.0	0.0	100.0
CM03	CRYSTAL GROWTH RESUP-1	PMXX	29.0	0.0	0.5
CM04	CRYSTAL GROWTH RESUP-2	PMCL	29.0	0.0	0.5
SA03	ASTROPHYSICS FREE-FLYER	FMXM	29.0	0.0	100.0
SA04	ASTROPHYSICS OBSERVATORIES	FMXM	29.0	1.0	100.0
CC03	INTELSAT-7,7A CLASS COMSAT	FXCL	0.0	0.0	0.0
CC04	MULTIBEAM COMM. SATELLITE	SSCM	0.0	0.0	0.0
CC05	RECONFIGURABLE COMM. SATELLITE	FXCM	0.0	0.0	1.9
CM05	CONT FLOW ELEC-TROPH PLATFORM	PMCL	29.0	0.0	100.0
CM06	CONTINUOUS FLOW ELECTRO RESUPP	PMXL	29.0	2.0	0.0
CM07	GLASS PROC PLANT	SPCL	29.0	10.6	100.0
CM08	GLASSPROC OPTICA LFIBERS RESUPP	SPCL	29.0	0.0	0.0
OT01	LOW INCL STA MODULE DEL	SSSS	29.0	20.0	100.0
OT02	LOW INCL STA RESUPPLY	SORS	29.0	0.0	100.0
OT05	HI-ALT STA RESUPPLY	OMSB	29.0	0.0	100.0
TS02	TECH DEVEL CARRY-ONS	SSSA	29.0	0.5	6.8
SA05	LARGE RADIO TELESCOPE	FMCH	29.0	0.0	100.0

LOW INCLINATION

PEAK POWER AVERAGE POWER

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85.0	66.4

HIGH INCLINATION

PEAK POWER	AVERAGE POWER
45.3	24.1

RESOURCES SUMMARY FOR LOW INCLINATION SPACE STATION

INTERNAL VOLUME	2.0	CUBIC METERS
POWER	66.4	KW
NO. OF PORTS	5.	

RESOURCES SUMMARY FOR HIGH INCLINATION SPACE STATION

INTERNAL VOLUME	8.8	CUBIC METERS
POWER	24.1	KW
NO. OF PORTS	6.	

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POINTING & DISTURBANCE SUMMARY FOR LOW INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350
CM01						----------									
CM02	----------														
CM03								-							
CM04								-							
SA03	----------														
SA04	----------														
CC03								-							
CC04								-							
CC05								-							
CM05	----------														
CM06								-							
CM07	----------														
CM08								-							
OT01	----------														
OT02	----------														
OT05	----------														
TS02							-----								
SA05	----------														

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POINTING & DISTURBANCE SUMMARY FOR HIGH INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

```
                        1    1    1    1    2    2    2    2    3    3    3
          2    5    7    0    2    5    7    0    2    5    7    0    2    5
     0    5    0    5    0    5    0    5    0    5    0    5    0    5    0
SO01 00000000000000000000000000000000000000000000000000000000000000000
SO02 00
SO03 0000000000
SO04 0000000000000000000000000000000000000000
OT03 ---------------------------------------------------------------------------
OT04 ---------------------------------------------------------------------------
SP02 0000000
SA01 ***************************************************************************
SL08 ---------------------------------------------------------------------------
```

* * * SPACE STATION OPERATIONS ANALYSIS FOR YEAR 2005 * * *

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 1
NUMBER OF FLIGHTS: 1 PRIME MISSION: **MULTIBEAM COMM SATELLITE OUTCOME # IS 0 KEY IS CC04
INCLINATION IS 0.00
CODE IS SSCM
SECOND MISSION: TMS PROP DELIV OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP.XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.911
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS 1.661

SP STA SYS OPS 10.075

EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

OTV OPERATIONS

UNADJUSTED DURATIONS
MAINTAIN STAGE = 1.150
MATE TO PAYLD = 0.131
STAGE/STAGE MATE = 0.210
OTV/PLD C/O = 0.555
LAUNCH = 0.082
CAPTURE = 0.042
MISSION OPS = 2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 1 FLIGHTS:
AT SPACE STA 8.756AWAY 4.200
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 6.987

S/C SYS - ELEC 9.160

S/C SYS - MECH 7.470

S/C SYS - FLUIDS 7.879

SP STA SYS OPS 16.972

EVA CRANE OP 8.636

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EVA SERVICE TECH 15.881

MANNED OTV PILOT 8.660

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.993
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.700
TEST & C/O = 3.400
MODULE MATE = 0.152
FAB STRUCT = 0.246

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 11.650
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 5.776

S/C SYS - ELEC 3.730

S/C SYS - MECH 3.730

S/C SYS - FLUIDS 3.570

SP STA SYS OPS 23.299

EVA CRANE OP 8.502

EVA SERVICE TECH 5.562

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 1 IN MANDAYS/YR

STS OPERATIONS	3.9
CONSTRUCTION OPERATIONS	11.6
OTV OPERATIONS	8.8
OTV MISSIONS	4.2

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 2
NUMBER OF FLIGHTS: 2 PRIME MISSION: **INTELSAT-7,7A CLASS COMSAT OUTCOME # IS 0 KEY IS CC03
INCLINATION IS 0.00
CODE IS FXCL
SECOND MISSION: TMS CAB DELIVERY OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3954
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 7.823

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STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS	3.322
SP STA SYS OPS	20.149
EVA CRANE OP	15.120
EVA SERVICE TECH	15.120

OTV OPERATIONS

UNADJUSTED DURATIONS

MAINTAIN STAGE	=	1.150
MATE TO PAYLD	=	0.131
STAGE/STAGE MATE	=	0.210
OTV/PLD C/O	=	0.555
LAUNCH	=	0.082
CAPTURE	=	0.042
MISSION OPS	=	2.000

ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 2 FLIGHTS:
AT SPACE STA 17.512AWAY 8.400
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	13.973
S/C SYS - ELEC	18.320
S/C SYS - MECH	14.939
S/C SYS - FLUIDS	15.758
SP STA SYS OPS	33.945
EVA CRANE OP	17.272
EVA SERVICE TECH	31.762
MANNED OTV PILOT	17.319

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.200
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.280
TEST & C/O	=	0.486

ADJUSTED DUR FOR 2 FLIGHTS, AT SPACE STATION 4.292
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA	1.633
S/C SYS - ELEC	1.021

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S/C SYS - MECH	1.021
S/C SYS - FLUIDS	1.021
SP STA SYS OPS	8.585
EVA CRANE OP	4.502
EVA SERVICE TECH	2.150

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 2 IN MANDAYS/YR

STS OPERATIONS	7.8
CONSTRUCTION OPERATIONS	4.3
OTV OPERATIONS	17.5
OTV MISSIONS	8.4

TYPE #1 = 2 TYPE #2 = 2

***>> FLIGHT NO. 3
NUMBER OF FLIGHTS: 4 PRIME MISSION: **RECONFIGURABLE COMM. SATELLI OUTCOME # IS 0 KEY IS CC05
INCLINATION IS 0.00
CODE IS FXCM
SECOND MISSION: CRYSTAL GROWTH RESUP-2 OUTCOME # IS 0
KEY IS CM04
CODE IS PMCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS

ORBITER ARRIVE	=	0.0416	
ORBITER OFFLOAD	=	0.6000	
ORBITER OFFLOAD	=	0.6000	(MISSION 2)
ORBITER DEPART	=	0.0210	
ORBITER PROP XFR	=	0.3629	

ADJ STS DURATION AT SP STA FOR TOTAL OF 4 FLIGHTS: 10.606

STS OPERATIONS MISSION RESULTS

CREW SKILL	MANDAYS
S/C SYS - FLUIDS	6.097
SP STA SYS OPS	29.536
EVA CRANE OP	20.160
EVA SERVICE TECH	20.160

OTV OPERATIONS

UNADJUSTED DURATIONS

MAINTAIN STAGE	=	1.150
MATE TO PAYLD	=	0.131
STAGE/STAGE MATE	=	0.210
OTV/PLD C/O	=	0.555
LAUNCH	=	0.082
CAPTURE	=	0.042
MISSION OPS	=	7.000

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ADJ OTV OP DURATION FOR FIRST MISSION, TOTAL OF 4 FLIGHTS:
AT SPACE STA 77.025AWAY 58.800

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	69.947
S/C SYS - ELEC	78.641
S/C SYS - MECH	71.879
S/C SYS - FLUIDS	72.970
SP STA SYS OPS	57.127
EVA CRANE OP	24.464
EVA SERVICE TECH	53.444
MANNED OTV PILOT	118.638

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	0.993
MATE TO FIXT	=	0.056
DEPLOY/ASSEMBLE	=	0.140
TEST & C/O	=	3.400
MODULE MATE	=	0.152

ADJUSTED DUR FOR 4 FLIGHTS, AT SPACE STATION 39.824

FIRST CREW SKILL	MISSION RESULTS MANDAYS
S/C SYS - DATA	23.103
S/C SYS - ELEC	14.918
S/C SYS - MECH	14.918
S/C SYS - FLUIDS	14.280
SP STA SYS OPS	79.649
EVA CRANE OP	22.529
EVA SERVICE TECH	20.177

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 3 IN MANDAYS/YR

STS OPERATIONS	10.6
CONSTRUCTION OPERATIONS	39.8
OTV OPERATIONS	77.0
OTV MISSIONS	58.8

UNADJUSTED DURATIONS

ORIGINAL PAGE IS
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SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 4 FLIGHTS, AT SPACE STATION 46.696
SECOND MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 26.497

S/C SYS - ELEC 17.279

S/C SYS - MECH 17.279

S/C SYS - FLUIDS 16.321

SP STA SYS OPS 93.391

EVA CRANE OP 28.106

EVA SERVICE TECH 25.754

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 3 IN MANDAYS/YR

STS OPERATIONS	10.6
CONSTRUCTION OPERATIONS	46.7
OTV OPERATIONS	77.0
OTV MISSIONS	58.8

TYPE #1 = 2 TYPE #2 = 4

***>> FLIGHT NO. 4
NUMBER OF FLIGHTS: 2 PRIME MISSION: **CRYSTAL GROWTH RESUP-2 OUTCOME # IS 0 KEY IS CM04
INCLINATION IS 29.00
CODE IS PMCL
SECOND MISSION: TMS PROP DELIV OUTCOME # IS 0

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0416
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ORBITER PROP XFR = 0.3304
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 7.823
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - FLUIDS 2.776

SP STA SYS OPS 19.467

EVA CRANE OP 15.120

EVA SERVICE TECH 15.120

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CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486
MODULE MATE = 0.076

ADJUSTED DUR FOR 2 FLIGHTS, AT SPACE STATION 3.436
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 1.697

S/C SYS - ELEC 1.180

S/C SYS - MECH 1.180

S/C SYS - FLUIDS 1.021

SP STA SYS OPS 6.871

EVA CRANE OP 2.789

EVA SERVICE TECH 2.789

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 4 IN MANDAYS/YR

STS OPERATIONS	7.8
CONSTRUCTION OPERATIONS	3.4
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 3 TYPE #2 = 4

***>> FLIGHT NO. 5
NUMBER OF FLIGHTS: 1 PRIME MISSION: LIQ DROPLET RADIATOR OUTCOME # IS 0 KEY IS TE02
INCLINATION IS 29.00
CODE IS SPCL
SECOND MISSION: LOW INCL STA RESUPPLY OUTCOME # IS 0
KEY IS OT02
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER OFFLOAD = 0.6000 (MISSION 2)
ORBITER RELOAD = 0.6000 (MISSION 2)
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 1 FLIGHTS: 3.999
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 8.261

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EVA CRANE OP 7.560

EVA SERVICE TECH 7.560

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
TEST & C/O = 0.486

ADJUSTED DUR FOR 1 FLIGHTS, AT SPACE STATION 1.558
FIRST MISSION RESULTS
CREW SKILL MANDAYS

S/C SYS - DATA 0.816

S/C SYS - ELEC 0.510

S/C SYS - MECH 0.510

S/C SYS - FLUIDS 0.510

SP STA SYS OPS 3.116

EVA CRANE OP 1.075

EVA SERVICE TECH 1.075

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 5 IN MANDAYS/YR

STS OPERATIONS	4.0
CONSTRUCTION OPERATIONS	1.6
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

DURATION SUMMARY FORSECOND MISSION FLIGHT NO. 5 IN MANDAYS/YR

STS OPERATIONS	4.0
CONSTRUCTION OPERATIONS	1.6
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 6
NUMBER OF FLIGHTS: 20 PRIME MISSION: CONTINUOUS FLOW ELECTRO RESUPP OUTCOME # IS 0 KEY IS CM06
INCLINATION IS 29.00
CODE IS PMXL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000

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ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 20 FLIGHTS: 29.576
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 64.411

EVA CRANE OP 50.400

EVA SERVICE TECH 50.400

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 6 IN MANDAYS/YR

STS OPERATIONS	29.6
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 2 TYPE #2 = 0

***>> FLIGHT NO. 7
NUMBER OF FLIGHTS: 15 PRIME MISSION: GLASSPROC OPTICA LFIBERS RESUPP OUTCOME # IS 0 KEY IS CM08
INCLINATION IS 29.00
CODE IS SPCL

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 15 FLIGHTS: 22.182
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 48.308

EVA CRANE OP 37.800

EVA SERVICE TECH 37.800

CONSTRUCTION OPERATIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.200
MATE TO FIXT = 0.056
DEPLOY/ASSEMBLE = 0.070
TEST & C/O = 0.486
MODULE MATE = 0.152

ADJUSTED DUR FOR 15 FLIGHTS, AT SPACE STATION 30.366
FIRST MISSION RESULTS
CREW SKILL MANDAYS

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S/C SYS - DATA	13.205
S/C SYS - ELEC	10.049
S/C SYS - MECH	10.049
S/C SYS - FLUIDS	7.654
SP STA SYS OPS	60.732
EVA CRANE OP	30.114
EVA SERVICE TECH	25.704

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 7 IN MANDAYS/YR

STS OPERATIONS	22.2
CONSTRUCTION OPERATIONS	30.4
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 8
NUMBER OF FLIGHTS: 7 PRIME MISSION: LOW INCL STA RESUPPLY OUTCOME # IS 0 KEY IS OT02
INCLINATION IS 29.00
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 7 FLIGHTS: 19.172
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS	40.184
EVA CRANE OP	35.280
EVA SERVICE TECH	35.280

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 8 IN MANDAYS/YR

STS OPERATIONS	19.2
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

TYPE #1 = 4 TYPE #2 = 0

***>> FLIGHT NO. 9
 NUMBER OF FLIGHTS: 2 PRIME MISSION: HI-INCL STATION RESUPPLY OUTCOME # IS 0 KEY IS OT04
INCLINATION IS 98.00
CODE IS SORS

SHUTTLE OPERATIONS

UNADJUSTED DURATIONS
ORBITER ARRIVE = 0.0832
ORBITER OFFLOAD = 0.6000
ORBITER RELOAD = 0.6000
ORBITER DEPART = 0.0210
ADJ STS DURATION AT SP STA FOR TOTAL OF 2 FLIGHTS: 5.478
STS OPERATIONS MISSION RESULTS
CREW SKILL MANDAYS

SP STA SYS OPS 11.481

EVA CRANE OP 10.080

EVA SERVICE TECH 10.080

CONSTRUCTION OPERATIONS

DURATION SUMMARY FORFIRST MISSION FLIGHT NO. 9 IN MANDAYS/YR

STS OPERATIONS	5.5
CONSTRUCTION OPERATIONS	0.0
OTV OPERATIONS	0.0
OTV MISSIONS	0.0

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PAYLOADS SERVICING ANALYSIS

PAYLOAD WITH KEY S001 EARTH OBSERV PALLET

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

EARTH & OC SCI = 150.000

UPDATED WORK DURATION AT SP STA 150.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.000
EARTH, OCEAN OBS	150.000
S/C SYS - ELEC	7.500
S/C SYS - FLUIDS	7.500
SP STA SYS OPS	7.500

DURATION SUMMARY FOR PAYLOAD NO. 1 S001 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	150.0

PAYLOAD WITH KEY S002 SYNTH APERTURE RADAR

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

EARTH & OC SCI = 5.000

UPDATED WORK DURATION AT SP STA 5.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	0.500
EARTH, OCEAN OBS	5.000
S/C SYS - ELEC	0.250
S/C SYS - FLUIDS	0.250

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SP STA SYS OPS 0.250

DURATION SUMMARY FOR PAYLOAD NO. 2 S002 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 5.0

PAYLOAD WITH KEY S003 HETERODYNING CO2 LIDAR

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 5.000

UPDATED WORK DURATION AT SP STA 5.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 0.500

EARTH, OCEAN OBS 5.000

S/C SYS - ELEC 0.250

S/C SYS - FLUIDS 0.250

SP STA SYS OPS 0.250

DURATION SUMMARY FOR PAYLOAD NO. 3 S003 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 5.0

PAYLOAD WITH KEY S004 UPPER ATMOS RESEARCH PKG

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
EARTH & OC SCI = 145.000

UPDATED WORK DURATION AT SP STA 145.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

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NO SPECIAL SKILL	14.500
EARTH, OCEAN OBS	145.000
S/C SYS - ELEC	7.250
S/C SYS - FLUIDS	7.250
SP STA SYS OPS	7.250

DURATION SUMMARY FOR PAYLOAD NO. 4 S004 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	145.0

PAYLOAD WITH KEY OT03 SPACE STATION MODULES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 5 OT03 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	67.200
SP STA SYS OPS	470.400
EVA CRANE OP	67.200
EVA SERVICE TECH	67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 5 OT03 IN MANDAYS/YR

SERVICING OPERATIONS	336.0
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY OT04 HI-INCL STATION RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

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SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 6 OT04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY SP02 SPACE PHYSICS PALLET

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
PHYSICS SCIENCE = 54.000

UPDATED WORK DURATION AT SP STA 54.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 5.400

PHYS SCI RESEARC 54.000

S/C SYS - ELEC 2.700

S/C SYS - FLUIDS 2.700

SP STA SYS OPS 2.700

DURATION SUMMARY FOR PAYLOAD NO. 8 SP02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 54.0

PAYLOAD WITH KEY SA01 VLBI/COSMIC RAY PKG

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
ASTROPHYSICS = 67.000

UPDATED WORK DURATION AT SP STA 67.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL	6.700
ASTROPHSICS	67.000
S/C SYS - ELEC	3.350
S/C SYS - FLUIDS	3.350
SP STA SYS OPS	3.350

DURATION SUMMARY FOR PAYLOAD NO. 9 SA01 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	67.0

PAYLOAD WITH KEY SL08 RAD BIOLOGY IN SM MAMMALS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 30.000

UPDATED WORK DURATION AT SP STA 30.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	3.000
MED/BIO RESEARCH	30.000
S/C SYS - ELEC	1.500
S/C SYS - FLUIDS	1.500
SP STA SYS OPS	1.500

DURATION SUMMARY FOR PAYLOAD NO. 10 SL08 IN MANDAYS/YR

SERVICING OPERATIONS	0.0
SCIENCE & TECH DEMO	30.0

PAYLOAD WITH KEY SL04 LIFESCIENCES RES FAC

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 191.000

UPDATED WORK DURATION AT SP STA 191.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	19.100
MED/BIO RESEARCH	191.000
S/C SYS - ELEC	9.550
S/C SYS - FLUIDS	9.550
SP STA SYS OPS	9.550

DURATION SUMMARY FOR PAYLOAD NO. 14 SL04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 191.0

PAYLOAD WITH KEY SL05 CENTRIFUGE (ADD TO LSRF)

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 91.000

UPDATED WORK DURATION AT SP STA 91.0 WORK DAYS
RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	9.100
MED/BIO RESEARCH	91.000
S/C SYS - ELEC	4.550
S/C SYS - FLUIDS	4.550
SP STA SYS OPS	4.550

DURATION SUMMARY FOR PAYLOAD NO. 15 SL05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 91.0

PAYLOAD WITH KEY SL06 CLOSED ENV LSS EXPT MOD

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
LIFE SCIENCE = 547.500

UPDATED WORK DURATION AT SP STA 547.5 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 54.750

MED/BIO RESEARCH 547.500

S/C SYS - ELEC 27.375

S/C SYS - FLUIDS 27.375

SP STA SYS OPS 27.375

DURATION SUMMARY FOR PAYLOAD NO. 16 SL06 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 547.5

PAYLOAD WITH KEY CM01 MATLS SCIENCE LAB

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 300.000

UPDATED WORK DURATION AT SP STA 300.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 17 CM01 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 300.0

PAYLOAD WITH KEY CM02 CRYSTAL GROWTH FACTORY/PLAT

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 36.000
TEST & C/O = 1.944
TMS LAUNCH = 0.328
TMS OPS = 12.000
TMS CREW OPS = 12.000
TMS CAPTURE/BRTH = 0.168
TMS MAINT/REFUEL = 4.400
CREW MOD MAINT = 6.840

ADJUSTED SERVICING TIME FOR 18 CM02 154.7 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	61.471
S/C SYS - DATA	126.739
S/C SYS - ELEC	54.818
S/C SYS - MECH	125.800
S/C SYS - FLUIDS	44.206
SP STA SYS OPS	143.136
EVA SERVICE TECH	56.952
TMS PILOT	254.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 18 CM02 IN MANDAYS/YR

SERVICING OPERATIONS 154.7
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM03 CRYSTAL GROWTH RESUP-1

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
REMOTE SERVICE = 12.000
TEST & C/O = 1.458
TMS LAUNCH = 0.246
TMS OPS = 9.000
TMS CREW OPS = 9.000
TMS CAPTURE/BRTH = 0.126
TMS MAINT/REFUEL = 3.300
CREW MOD MAINT = 5.130

ADJUSTED SERVICING TIME FOR 19 CM03 84.5 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	30.353

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S/C SYS - DATA	79.304
S/C SYS - ELEC	25.364
S/C SYS - MECH	78.600
S/C SYS - FLUIDS	17.404
SP STA SYS OPS	75.852
EVA SERVICE TECH	42.714
TMS PILOT	127.562

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 19 CM03 IN MANDAYS/YR

SERVICING OPERATIONS	84.5
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM04 CRYSTAL GROWTH RESUP-2

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	16.000
TEST & C/O	=	1.964
TMS LAUNCH	=	0.328
TMS OPS	=	12.000
TMS CREW OPS	=	12.000
TMS CAPTURE/BRTH	=	0.168
TMS MAINT/REFUEL	=	4.400
CREW MOD MAINT	=	6.840

ADJUSTED SERVICING TIME FOR 20 CM04 112.7 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	40.471
S/C SYS - DATA	105.739
S/C SYS - ELEC	33.818
S/C SYS - MECH	104.800
S/C SYS - FLUIDS	23.206
SP STA SYS OPS	101.136
EVA SERVICE TECH	56.952
TMS PILOT	170.083

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 20 CM04 IN MANDAYS/YR

SERVICING OPERATIONS	112.7
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY SA03 ASTROPHYSICS FREE-FLYER

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	2.000
TEST & C/O	=	3.400
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 22 SA03 30.1 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	11.078
S/C SYS - DATA	36.574
S/C SYS - ELEC	6.355
S/C SYS - MECH	25.324
S/C SYS - FLUIDS	4.313
SP STA SYS OPS	33.323
EVA SERVICE TECH	14.238
TMS PILOT	34.121

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 22 SA03 IN MANDAYS/YR

SERVICING OPERATIONS	30.1
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY SA04 ASTROPHYSICS OBSERVATORIES

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE = 6.000
TEST & C/O = 3.400
TMS LAUNCH = 0.082
TMS OPS = 3.000
TMS CREW OPS = 3.000
TMS CAPTURE/BRTH = 0.042
TMS MAINT/REFUEL = 1.100
CREW MOD MAINT = 1.710

ADJUSTED SERVICING TIME FOR 23 SA04 38.5 DAYS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	15.278
S/C SYS - DATA	40.774
S/C SYS - ELEC	10.555
S/C SYS - MECH	29.524
S/C SYS - FLUIDS	8.513
SP STA SYS OPS	41.723
EVA SERVICE TECH	14.238
TMS PILOT	50.921

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 23 SA04 IN MANDAYS/YR

SERVICING OPERATIONS 38.5
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC03 INTELSAT-7,7A CLASS COMSAT

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 26 CC03 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC04 MULTIBEAM COMM. SATELLITE

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 27 CC04 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CC05 RECONFIGURABLE COMM. SATELLITE

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 28 CC05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM05 CONT FLOW ELEC- TROPH PLATFORM

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

ADJUSTED SERVICING TIME FOR 29 CM05 0.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 29 CM05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY CM06 CONTINUOUS FLOW ELECTRO RESUPP

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	48.000
TEST & C/O	=	1.944
TMS LAUNCH	=	0.328
TMS OPS	=	12.000
TMS CREW OPS	=	12.000
TMS CAPTURE/BRTH	=	0.168
TMS MAINT/REFUEL	=	4.400
CREW MOD MAINT	=	6.840

ADJUSTED SERVICING TIME FOR 30 CM06 179.9 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	74.071
S/C SYS - DATA	139.339
S/C SYS - ELEC	67.418
S/C SYS - MECH	138.400
S/C SYS - FLUIDS	56.806
SP STA SYS OPS	168.336
EVA SERVICE TECH	56.952
TMS PILOT	304.483

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 30 CM06 IN MANDAYS/YR

SERVICING OPERATIONS	179.9
SCIENCE & TECH DEMO	0.0

PAYLOAD WITH KEY CM07 GLASS PROC PLANT

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS

SETUP/TAKEDOWN	=	50.000

UPDATED WORK DURATION AT SP STA 50.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 31 CM07 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 50.0

PAYLOAD WITH KEY CM08 GLASSPROC OPTICA LFIBERS RESUPP

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 8.000

UPDATED WORK DURATION AT SP STA 8.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 32 CM08 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 8.0

PAYLOAD WITH KEY OT01 LOW INCL STA MODULE DEL

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS
SPACE STA HOUSEK = 160.000

ADJUSTED SERVICING TIME FOR 33 OT01 336.0 DAYS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 67.200

SP STA SYS OPS 470.400

EVA CRANE OP 67.200

EVA SERVICE TECH 67.200

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
SETUP/TAKEDOWN = 0.000

UPDATED WORK DURATION AT SP STA 0.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

DURATION SUMMARY FOR PAYLOAD NO. 33 OT01 IN MANDAYS/YR

SERVICING OPERATIONS 336.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT02 LOW INCL STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 34 OT02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY OT05 HI-ALT STA RESUPPLY

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 35 OT05 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 0.0

PAYLOAD WITH KEY TE02 LIQ DROPLET RADIATOR

SATELLITE SERVICING OPERATIONS
SATELLITE SERVICING MISSION RESULTS
CREW SKILL MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 20.000

UPDATED WORK DURATION AT SP STA 20.0 WORK DAYS
RESEARCH MISSION RESULTS
CREW SKILL MANDAYS

NO SPECIAL SKILL 4.000

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ENGINEERING	20.000
S/C SYS - DATA	3.000
S/C SYS - ELEC	1.000
S/C SYS - MECH	1.000
S/C SYS - FLUIDS	4.000
SP STA SYS OPS	2.000
EVA CRANE OP	1.000
EVA SERVICE TECH	1.000
MANNED OTV PILOT	3.000

DURATION SUMMARY FOR PAYLOAD NO. 44 TE02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 20.0

PAYLOAD WITH KEY TS02 TECH DEVEL CARRY-ONS

SATELLITE SERVICING OPERATIONS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS

SCIENCE & APPLICATIONS ONBOARD MISSIONS

UNADJUSTED DURATIONS
DOD/TECH DEV = 20.000

UPDATED WORK DURATION AT SP STA 20.0 WORK DAYS

RESEARCH MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	4.000
ENGINEERING	20.000
S/C SYS - DATA	3.000
S/C SYS - ELEC	1.000
S/C SYS - MECH	1.000
S/C SYS - FLUIDS	4.000
SP STA SYS OPS	2.000
EVA CRANE OP	1.000
EVA SERVICE TECH	1.000

MANNED OTV PILOT 3.000

DURATION SUMMARY FOR PAYLOAD NO. 45 TS02 IN MANDAYS/YR

SERVICING OPERATIONS 0.0
SCIENCE & TECH DEMO 20.0

PAYLOAD WITH KEY SA05 LARGE RADIO TELESCOPE

SATELLITE SERVICING OPERATIONS

UNADJUSTED DURATIONS

REMOTE SERVICE	=	10.000
TEST & C/O	=	10.100
TMS LAUNCH	=	0.082
TMS OPS	=	3.000
TMS CREW OPS	=	3.000
TMS CAPTURE/BRTH	=	0.042
TMS MAINT/REFUEL	=	1.100
CREW MOD MAINT	=	1.710

ADJUSTED SERVICING TIME FOR 46 SA05 61.0 DAYS

SATELLITE SERVICING MISSION RESULTS

CREW SKILL	MANDAYS
NO SPECIAL SKILL	26.512
S/C SYS - DATA	73.114
S/C SYS - ELEC	14.755
S/C SYS - MECH	36.538
S/C SYS - FLUIDS	14.120
SP STA SYS OPS	78.263
EVA SERVICE TECH	14.238
TMS PILOT	67.721

SCIENCE & APPLICATIONS ONBOARD MISSIONS

DURATION SUMMARY FOR PAYLOAD NO. 46 SA05 IN MANDAYS/YR

SERVICING OPERATIONS 61.0
SCIENCE & TECH DEMO 0.0

SKILL MIX SUMMARIES LOW INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***		***COMMERC MISSIONS***		***TECH DEV MISSIONS**		****OPER SUPPORT*****	
	OPS SERV	MSN OP CONST	OPS SERV	MSN OP CONST	OPS SERV	MSN OP CONST	OPS SERV	MSN OP CONST

NO SPECIAL SKILL	0.0	52.9	83.0	0.0	0.0	206.4	0.0	0.0	0.0	0.0	8.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	829.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	150.5	0.0	0.0	90.9	451.1	0.0	71.9	0.0	0.0	6.0	0.8	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	31.7	41.5	0.0	106.1	181.4	0.0	48.2	0.0	0.0	2.0	0.5	0.0	0.0	0.0	0.0
S/C SYS - MECH	0.0	91.4	0.0	0.0	94.3	447.6	0.0	48.2	0.0	0.0	2.0	0.5	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	26.9	41.5	0.0	85.5	141.6	0.0	43.9	0.0	0.0	8.0	0.5	24.9	0.0	0.0	0.0
SP STA SYS OPS	0.0	153.3	41.5	0.0	197.0	488.5	0.0	272.5	2.5	0.0	4.0	3.1	148.9	470.4	0.0	0.0
EVA CRANE OP	0.0	0.0	0.0	0.0	156.2	0.0	0.0	96.5	2.5	0.0	2.0	1.1	80.6	67.2	0.0	0.0
EVA SERVICE TECH	0.0	42.7	0.0	0.0	206.9	213.6	0.0	82.1	2.5	0.0	2.0	1.1	80.6	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	144.6	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	152.8	0.0	0.0	0.0	856.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
1739.	4731.	95.	1007.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	417.4
MED/BIO RESEARCH	829.5
PHYS SCI RESEARC	0.0
EARTH, OCEAN OBS	0.0
ENGINEERING	40.0
ASTROPHSICS	0.0
S/C SYS - DATA	771.2
S/C SYS - ELEC	411.4
S/C SYS - MECH	684.0
S/C SYS - FLUIDS	372.9
SP STA SYS OPS	1781.7
EVA CRANE OP	406.2
EVA SERVICE TECH	698.8
MANNED OTV PILOT	150.6
TMS PILOT	1009.0
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 20.7 PEOPLE

SKILL MIX SUMMARIES HIGH INCLINATION

SKILL MIX DETAILS FOR ACCUMULATED MISS

CREW SKILL	***SCIENCE MISSIONS***				***COMMERC MISSIONS***				***TECH DEV MISSIONS**				****OPER SUPPORT*****			
	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST	OPS	SERV	MSN OP	CONST
NO SPECIAL SKILL	0.0	0.0	45.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.2	0.0	0.0
MED/BIO RESEARCH	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHYS SCI RESEARC	0.0	0.0	54.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EARTH, OCEAN OBS	0.0	0.0	305.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENGINEERING	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ASTROPHSICS	0.0	0.0	67.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - DATA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - ELEC	0.0	0.0	23.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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S/C SYS - MECH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S/C SYS - FLUIDS	0.0	0.0	22.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SP STA SYS OPS	0.0	0.0	22.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.5	470.4	0.0	0.0
EVA CRANE OP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
EVA SERVICE TECH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	67.2	0.0	0.0
MANNED OTV PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TMS PILOT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MATLS SCIENCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MANDAYS BY MISSION

SCIENCE & APP	COMMERCIAL	TECH DEV	OPS SUPPORT
570.	0.	0.	704.

MANDAYS BY SKILL

SKILL	MANDAYS
NO SPECIAL SKILL	112.8
MED/BIO RESEARCH	30.0
PHYS SCI RESEARC	54.0
EARTH, OCEAN OBS	305.0
ENGINEERING	0.0
ASTROPHSICS	67.0
S/C SYS - DATA	0.0
S/C SYS - ELEC	22.8
S/C SYS - MECH	0.0
S/C SYS - FLUIDS	22.8
SP STA SYS OPS	504.7
EVA CRANE OP	77.3
EVA SERVICE TECH	77.3
MANNED OTV PILOT	0.0
TMS PILOT	0.0
MATLS SCIENCE	0.0

TOTAL SPACE STATION CREW: 3.5 PEOPLE

LOW INCLINATION

DURATION SUMMARY FOR YEAR 2005 IN MANDAYS/YR

STS OPERATIONS	105.1
CONSTRUCTION	137.8
OTV OPERATIONS	103.3
OTV MISSIONS	71.4
SERVICING OPERATIONS	997.5
SCIENCE & TECH DEMO	1227.5

HIGH INCLINATION

DURATION SUMMARY FOR YEAR 2005 IN MANDAYS/YR

STS OPERATIONS	5.5
CONSTRUCTION	0.0
OTV OPERATIONS	0.0

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OTV MISSIONS	0.0
SERVICING OPERATIONS	336.0
SCIENCE & TECH DEMO	456.0

SUMMARY OF SPACE STATION PAYLOADS THIS YEAR

KEY	TITLE	PLCODE	INCL	PK POWER	DUTY CYCLE
S001	EARTH OBSERV PALLET	SPCL	98.0	3.5	82.2
S002	SYNTH APERTURE RADAR	SPCL	98.0	10.0	2.7
S003	HETERODYNING CO2 LIDAR	SPXX	98.0	1.0	13.7
S004	UPPER ATMOS RESEARCH PKG	SPCL	98.0	2.2	54.8
OT03	SPACE STATION MODULES	SSSS	98.0	15.0	100.0
OT04	HI-INCL STATION RESUPPLY	SORS	98.0	1.0	100.0
SP02	SPACE PHYSICS PALLET	SPCM	98.0	10.0	9.9
SA01	VLBI/COSMIC RAY PKG	SPCL	98.0	2.0	100.0
SL08	RAD BIOLOGY IN SM MAMMALS	SSSA	98.0	0.6	100.0
SL04	LIFESCIENCES RES FAC	SPXX	29.0	12.2	100.0
SL05	CENTRIFUGE (ADD TO LSRF)	SSCL	29.0	4.0	100.0
SL06	CLOSED ENV LSS EXPT MOD	SPCL	29.0	9.7	100.0
CM01	MATLS SCIENCE LAB	SPXX	29.0	25.0	35.6
CM02	CRYSTAL GROWTH FACTORY/PLAT	PMCL	29.0	0.0	100.0
CM03	CRYSTAL GROWTH RESUP-1	PMXX	29.0	0.0	0.5
CM04	CRYSTAL GROWTH RESUP-2	PMCL	29.0	0.0	0.5
SA03	ASTROPHYSICS FREE-FLYER	FMXM	29.0	0.0	100.0
SA04	ASTROPHYSICS	FMXM	29.0	1.0	100.0

OBSERVATORIES

CC03	INTELSAT-7,7A CLASS COMSAT	FXCL	0.0	0.0	0.0
CC04	MULTIBEAM COMM. SATELLITE	SSCM	0.0	0.0	0.0
CC05	RECONFIGURABLE COMM. SATELLITE	FXCM	0.0	0.0	1.9
CM05	CONT FLOW ELEC-TROPH PLATFORM	PMCL	29.0	0.6	100.0
CM06	CONTINUOUS FLOW ELECTRO RESUPP	PMXL	29.0	2.0	0.0
CM07	GLASS PROC PLANT	SPCL	29.0	10.6	100.0
CM08	GLASSPROC OPTICA LFIBERS RESUPP	SPCL	29.0	0.0	0.0
OT01	LOW INCL STA MODULE DEL	SSSS	29.0	20.0	100.0
OT02	LOW INCL STA RESUPPLY	SORS	29.0	0.0	100.0
OT05	HI-ALT STA RESUPPLY	OMSB	29.0	0.0	100.0
TE02	LIQ DROPLET RADIATOR	SPCL	29.0	2.0	5.5
TS02	TECH DEVEL CARRY-ONS	SSSA	29.0	0.5	6.8
SA05	LARGE RADIO TELESCOPE	FMCH	29.0	0.0	100.0

LOW INCLINATION

PEAK POWER	AVERAGE POWER
87.0	66.5

HIGH INCLINATION

PEAK POWER	AVERAGE POWER
45.3	24.1

RESOURCES SUMMARY FOR LOW INCLINATION SPACE STATION

INTERNAL VOLUME	2.0 CUBIC METERS
POWER	66.5 KW
NO. OF PORTS	6.

RESOURCES SUMMARY FOR HIGH INCLINATION SPACE STATION

INTERNAL VOLUME	8.8	CUBIC METERS
POWER	24.1	KW
NO. OF PORTS	6.	

POINTING & DISTURBANCE SUMMARY FOR LOW INCLINATION SPACE STATION

EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

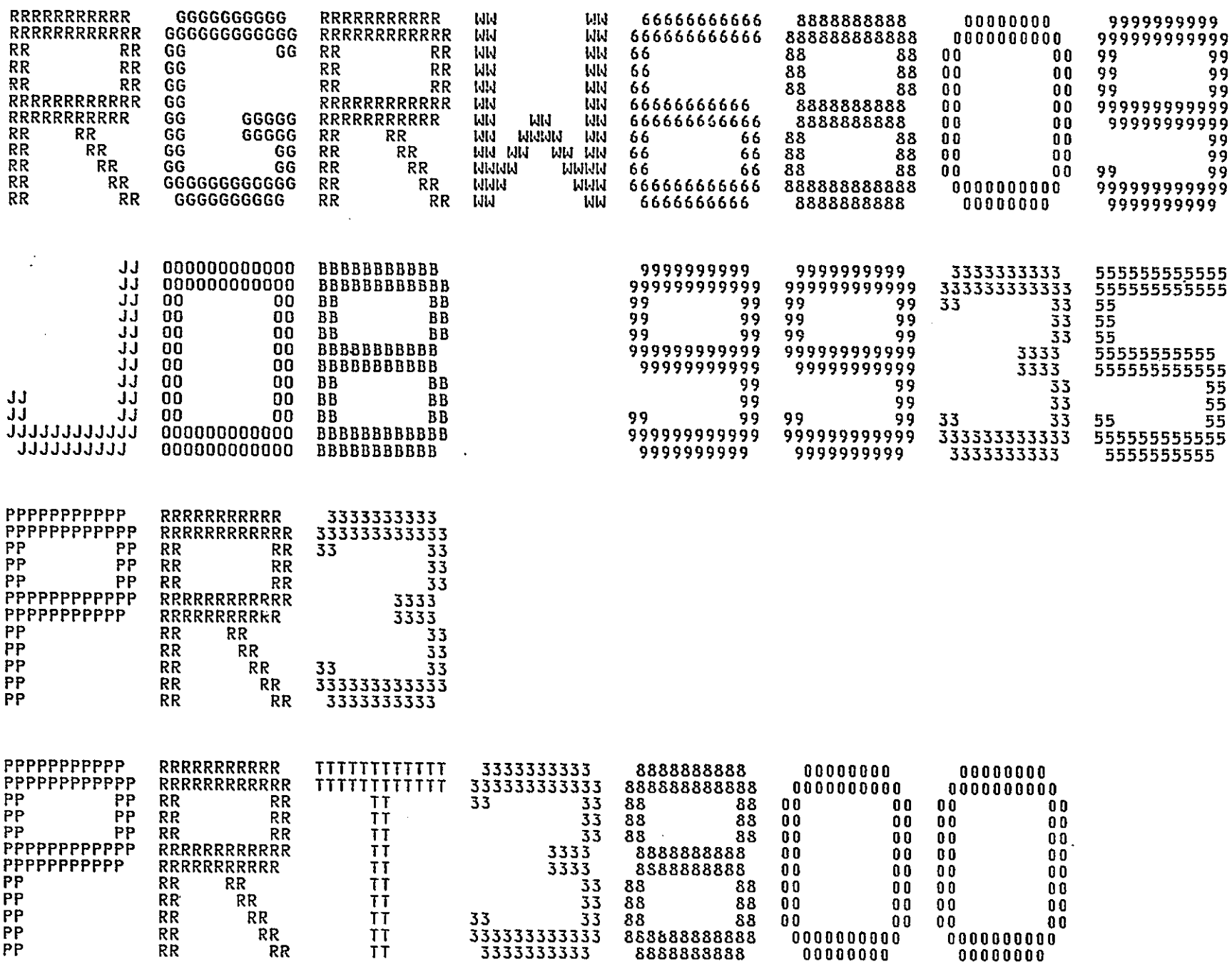
	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350
CM01						----------									
CM02	----------														
CM03								-							
CM04								-							
SA03	----------														
SA04	----------														
CC03								-							
CC04								-							
CC05								-							
CM05	----------														
CM06								-							
CM07	----------														
CM08								-							
OT01	----------														
OT02	----------														
OT05	----------														
TE02															****
TS02								-----							
SA05	----------														

POINTING & DISTURBANCE SUMMARY FOR HIGH INCLINATION SPACE STATION

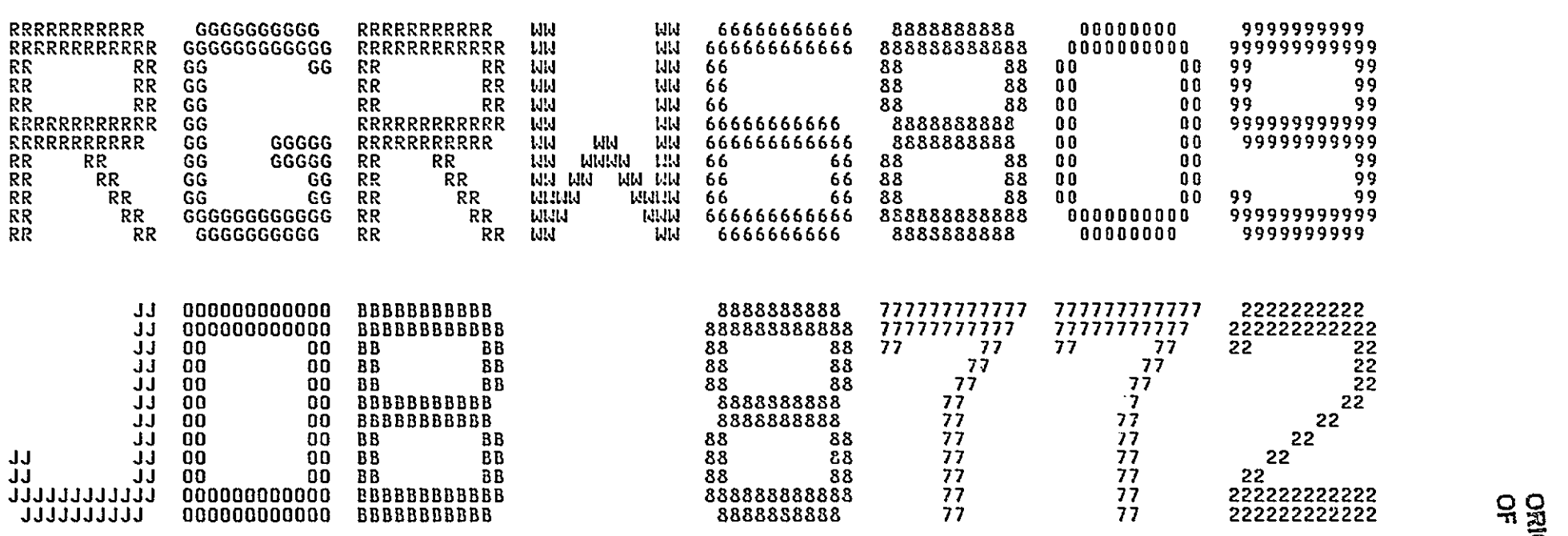
EARTH: 0 NONE: - INERTIAL: *

DAYS/YEAR

```
                          1    1    1    1    2    2    2    2    3    3    3
          2    5    7    0    2    5    7    0    2    5    7    0    2    5
     0    5    0    5    0    5    0    5    0    5    0    5    0    5    0
SO01 000000000000000000000000000000000000000000000000000000000000000000
SO02 00
SO03 0000000000
SO04 0000000000000000000000000000000000000000
OT03 ------------------------------------------------------------------------
OT04 ------------------------------------------------------------------------
SP02 0000000
SA01 ************************************************************************
SL08 ------------------------------------------------------------------------
```



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JOB RUN ON SY1-033H BEGINNING AT 12.30.21 ON 83.112
PRINTED ON PR3 BETWEEN 22.07.33 AND 22.08.03 ON 83.112

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```
IAT6140 JOB ORIGIN FROM GROUP=RM260    , DSP=CR , DEVICE=RM260RD1, 03B
13:34:05 IAT4401  LOCATE FOR STEP=S1        DD=STEPLIB  DSN=EUP001.LINKLIB
13:34:05 IAT4402 UNIT=3330V    ,VOL(S)=M1M007
13:34:27 ********************************************************************************************
13:34:27 * REGION *     SCRATCH      *  MAX CPU   *              MOUNTABLE                * PRTY *  ORIGINAL  *
13:34:27 * (REAL) * SYSDA * SYSVIO * STEP * JOB * 2314 * 9 TRACK * 7 TRACK * TOTAL * COMM * JOB ENTRY  *
13:34:27 ********************************************************************************************
13:34:27 *  0000K *  0000 *  0000  *  001 * 001 *  00  *    00   *    00   *   00  *  09  * 83112 1312 *
13:34:27 ********************************************************************************************
13:34:45 IAT5200 JOB 9935 (RGRW6809) IN SETUP ON MAIN=SY1
13:34:45 IAT5210 STEPLIB  USING D M1M007 ON SDG02 EUP001.LINKLIB
13:34:58 IAT2000 JOB 9935 RGRW6809 SELECTED SY2       GRP=BATCH
13:35:02  IEF403I RGRW6809 - STARTED 83112 13.35.59
13:37:33  IAT1600 JOB 9935 (RGRW6809) LINES EXCEEDED
13:37:36  IAT1600 JOB 9935 (RGRW6809) LINES EXCEEDED BY 3000
13:37:55  IAT1600 JOB 9935 (RGRW6809) LINES EXCEEDED BY 6000
13:38:08  IEF404I RGRW6809 - ENDED - TIME=13.39.05
13:38:09  BCS37XX  JOB /RGRW6809/ CRU=      20.97  TRU=     101.65  SEC ID=NXAB21       DATE=83.112
13:38:09  SYS001I JOB RGRW6809 - NXAB21,          7.34 CCUS (FACTORED).  SERVICE FACTOR 1.55
13:38:10 IAT5400 JOB 9935 (RGRW6809) IN BREAKDOWN
```

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```
//RGRW6809 JOB (WD,NXAB21),'G  ',PRTY=9
//*FORMAT PR,DDNAME=,DEST=ANYLOCAL,FORMS=N001,CHARS=TN12,FCB=ST88,
//*STACKER=S
//S1 EXEC PGM=BULKR,REGION=200K
//STEPLIB DD DSN=EUP001.LINKLIB,DISP=SHR
//SYSPRINT DD SYSOUT=A,DCB=(LRECL=137,BLKSIZE=6144,RECFM=VBA)
//HASPOUT  DD SYSOUT=A,DCB=(LRECL=220,BLKSIZE=6144,RECFM=VBA),
//  OUTLIM=200000
//HASPIN   DD DATA
/*
//
    1     //RGRW6809 JOB (WD,NXAB21),'G  ',PRTY=9
                                                          STEP NUMBER   1.
    2     //S1 EXEC PGM=BULKR,REGION=200K
    3     //STEPLIB DD DSN=EUP001.LINKLIB,DISP=SHR
    4     //SYSPRINT DD SYSOUT=A,DCB=(LRECL=137,BLKSIZE=6144,RECFM=VBA)
    5     //HASPOUT  DD SYSOUT=A,DCB=(LRECL=220,BLKSIZE=6144,RECFM=VBA),
          //  OUTLIM=200000
    6     //HASPIN   DD DATA,DCB=BLKSIZE=80
          //
```

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```
IEF236I ALLOC. FOR RGRW6809 S1
IEF237I 2C5  ALLOCATED TO STEPLIB
IEF237I 8F3  ALLOCATED TO SYS01961
IEF237I JES3 ALLOCATED TO SYSPRINT
IEF237I JES3 ALLOCATED TO HASPOUT
IEF237I JES3 ALLOCATED TO HASPIN
IAT1600 JOB 9935 (RGRW6809) LINES EXCEEDED
IAT1600 JOB 9935 (RGRW6809) LINES EXCEEDED BY 3000
IAT1600 JOB 9935 (RGRW6809) LINES EXCEEDED BY 6000
IEF142I RGRW6809 S1 - STEP WAS EXECUTED - COND CODE 0000
IEF285I   EUP001.LINKLIB                                KEPT
IEF285I   VOL SER NOS= M1M007.
IEF285I   SYSCTLG.VTSOT08                               KEPT
IEF285I   VOL SER NOS= TSOT08.
IEF285I   S1.SYSPRINT                                   SYSOUT
IEF285I   S1.HASPOUT                                    SYSOUT
IEF285I   JESI0001                                      SYSIN
IEF373I STEP /S1      / START 83112.1335
IEF374I STEP /S1      / STOP  83112.1339 CPU    0MIN 02.65SEC SRB    0MIN 00.19SEC VIRT   200K SYS   288K
BCS37XX STEP /S1      / CRU=     20.97  TRU=    101.65  SEC ID=D81E        DATE=83.112

      BCS COMPUTER RESOURCE UNIT
   COMPONENT             QUANTITY          CRU VALUE
   CPU                       2.65 SECONDS       1.21
   PRINTERS                27,693    LINES       9.58
   READERS                 15,163    CARDS       8.05
   MEMORY                     200    VIRTUAL      .38
   MASS STORAGE               116    STAGING      .23
   DIRECT ACCESS            2,363    3330        1.26
   CONSTANT                     1                 .26
                                                ------
                            TOTAL CRU           20.97

                                                                                  * END OF STEP   1 *
BCS37XX 83-TRU =    101.65,   84-TRU =      2.78,      83-CRU =     20.97,   84-CRU =      1.26      RGRW6809
CRU CACULATED AS:                                   CPU-SEC(     2.65)             .982
   4/22/1983                                        EXCPS  (      01)              .001
                                                    MEMORY (     200)             .020
                                                    TAPE DR(       0)             .000
                                                    CONSTANT                      .260
                                                    TOTAL 1984 CRU:              1.26
IEF375I  JOB /RGRW6809/ START 83112.1335
IEF376I  JOB /RGRW6809/ STOP  83112.1339 CPU    0MIN 02.65SEC SRB    0MIN 00.19SEC
BCS37XX  JOB /RGRW6809/ CRU=     20.97  TRU=    101.65  SEC ID=D81E        DATE=83.112

SYS002I  PRIORITY REQUESTED =  9 PRIORITY COMMITTED =  9 - PRIORITY RECEIVED =  9 - QTIME =     .38
```

ORIGINAL PAGE IS
OF POOR QUALITY